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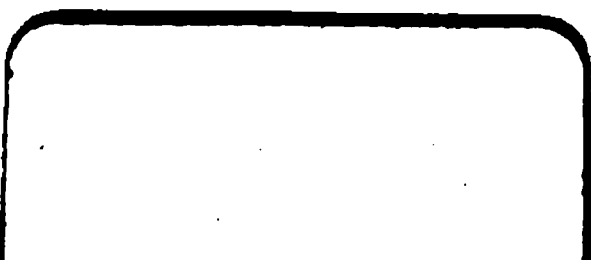
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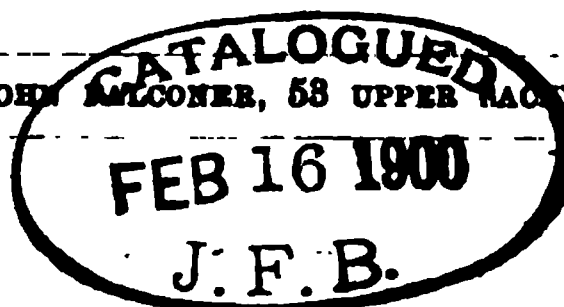
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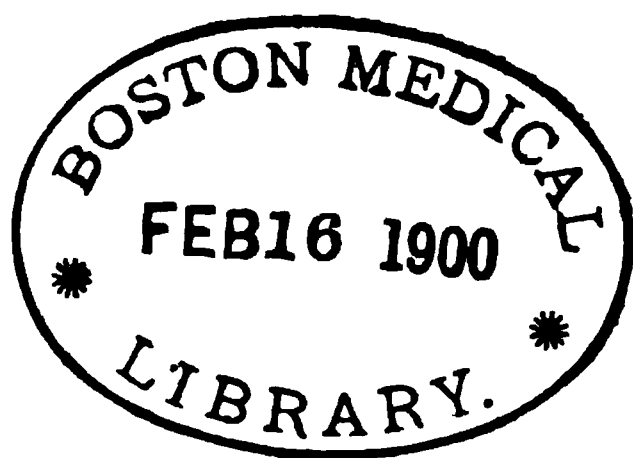
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THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

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PART I. ORIGINAL COMMUNICATIONS.

ART. I.—*Cases of Tachycardia*.^{*} By J. MAGEE FINNY, M.D.; Past President, Royal College of Physicians, Ireland; Physician, Sir P. Dun's Hospital; King's Professor of Practice of Medicine, School of Physic, Ireland.

THE subject of my paper is one of comparative rarity, and the cases which form its basis are good illustrations of it in its varied aspects as regards causation, duration, and gravity. It is remarkable, writes Dr. Bristowe in 1887, that cases of extreme rapidity of the heart's beat should have been so long overlooked, and yet the first three recorded instances seem to have been made in the *British Medical Journal* in 1866, by Dr. Cotton, Dr. Jas. Edmunds, and Sir Thos. Watson; and to their graphic description of the condition in its typical aspects little could be added by Dr. Bristowe, who himself, in 1887, published ten cases in a paper which forms one of the most valuable contributions to the subject.¹ The fact that the condition of paroxysmal heart-hurry so often occurs in otherwise healthy individuals, may possibly account for its being

^{*} Read before the Section of Medicine, in the Royal Academy of Medicine in Ireland, Friday, May 19, 1899.

so rarely observed, and further, its occurrence may take place without the smallest consciousness on the patient's part that his heart's rate is in any way perverted or accelerated, unless, and until, a medical man, on trying to count the pulse, may call his attention to its rate.

The name of "Tachycardia" is of modern days, and seems to have been given—15 years after Dr. Cotton's case—by Proebsting, a pupil of Gerhardt, in 1881. Whittaker, whose description is perhaps the best of those I consulted—prefers the word polycardia or pykno-cardia (*πυκνός σφυγμός* of Hippocrates), heart-hurry. He says—"It was in old times included under palpitation. The distinction is now drawn between the two, in that palpitation is a beating of the heart that is felt by the patient, while tachycardia is an increase in the frequency of the beats. Tachycardia, like palpitation, is always only a symptom, and never a distinct disease. In palpitation there is usually, but not necessarily, an increase of frequency; but the heart may throb violently, yet may beat slowly. Tachycardia is usually, but is not necessarily, perceived by the patient."²

In fact, one of the great distinguishing peculiarities of *pathological* as contrasted with *symptomatic* tachycardia, is the little disturbance it gives to the sufferer. It may be so slight that the patient goes about his duties as "unconscious as a babe of anything unusual" (Balfour),³ or there may be some slight sense of oppression, some nervous excitement or dyspnoea, or a little lividity.

Thus, it is more a state of altered rate of the heart's action, not a disease of the heart, and as it occurs in paroxysms, Bouveret gave it the name of "Paroxysmal Tachycardia." It is as though the heart's action was gone wrong, and the organ, no longer under control, beat of its own free will. Some fancifully speak of it as of a watch running down, when the check on the mainspring is broken, or as an engine, on an incline, no longer under control of the brake.

Physiology teaches that the heart is under the control of two nervous influences—the stimulating filaments from the sympathetic cervical ganglia to the cardiac ganglia.

and the repressing or inhibitory nerve derived from the pneumogastric. Experiment has shown that when the inhibitory nervous influence is withdrawn or destroyed the heart's beat is accelerated up to 140 or 160—but not faster (Martius)⁴—and pathologically a lesion in the medulla, destroying the origin of the vagus, has similar results, for Doelger reported, in 1883, a case of apoplexy of the inhibitory centre of the medulla, in which the pulse rose to 168.⁵ And again, the motor ganglia in the heart itself may be over stimulated. But neither pathological nor physiological research has as yet explained how the heart can suddenly rise from 70–80 up to 240, 260, or 308—and after a period, shorter or longer, revert with equal suddenness to its original rate. It is worth noting that during the paroxysm of tachycardia there is no increase of arterial pressure, or of work done by the heart. The rapid action is primarily due to shortening of the diastole, and therefore during systole so little blood is expelled that the aggregate amount is not increased in the minute. Physiology further shows that the accelerator nerves in the heart have no trophic relations to the heart, and therefore the rapidity of the pulse, due to acceleration or irritation, should produce little effect on the heart or general system. In fact, essentially, paroxysmal tachycardia is a neurosis of the heart, a “cardiac nerve storm” (Wood).⁶

Talamon suggests that it is of the nature of an epileptic seizure, and may be found in persons of neuropathic history.⁷ Gibson considers all these views purely speculative, and adds another—that its essential nature is analogous to the respiratory changes observed in the Cheyne-Stokes respiration.⁸

In truth, paroxysmal tachycardia is induced by no known cause, although it has been attributed to, and seemingly produced by, excess of tobacco, a fall, a blow, or reflexly by indigestion, worms, nasal polypi, urinary calculi, &c.

Larcena classifies the causes of tachycardia under eight headings, as given in Whittaker's exhaustive article, already referred to:—(1) In diseases of the heart and blood-vessels; (2) febrile; (3) peripheric compression of one or both vagi or their nucleus; (4) organic diseases of

the nervous system ; (5) general diseases—*e.g.*, typhoid, diphtheria, &c. ; (6) toxic—*e.g.*, alcohol, &c. ; (7) reflex, from any organ ; (8) neurosis.

Tachycardia may occur at any period of life—from 70 years of age (Balfour)⁹ to 6 years. This latter I will mention, as it is the youngest case on record, and the most recent, as far as I can discover (described by Herringham). It was a child of 11, who for 5 years previously had had sudden attacks of heart-hurry without cause, and lasting 36 hours to 13 days, subsiding during sleep. The pulse-rate ranged during the attack from 240-260. There was very little precordial discomfort ; no pain ; respirations were accelerated, with slight cyanosis, but no anasarca or pulmonary oedema. There was no evidence of cardiac disease, except enlargement of the organ in the transverse direction both in the intervals and still more during the attack. The child had been, previous to the first attack, in robust health, and the history pointed to an absence of rheumatism or syphilis. Different forms of treatment, based on various theories as to the cause of the tachycardia, were tried, but had no effect in checking or alleviating the attacks.¹⁰

In one of Bristowe's cases the paroxysms of recurrent tachycardia were of some years' duration—the attacks lasting 3 days, in another they lasted 5 weeks. In the intervals, some patients enjoyed perfect health, others were invalids—and one (case 4, p. 111), was actively employed as a governess, with much responsibility, aged forty, who travelled about inspecting schools, while her heart was beating 200-260 (average 216). After five weeks the heart suddenly fell to 70-80, and for fifteen years these paroxysms would recur with very little general distress or discomfort. In the end this lady died with symptoms of cardiac obstruction. There was no autopsy.¹¹

The following two cases in my own practice illustrate the occurrence of paroxysmal tachycardia in the foregoing aspects. Case I. was a lady with pre-existent and well-marked valvular and arterial disease. Case II. a lady in whom there existed no previous disease.

CASE I.—*Paroxysmal Tachycardia*—Mrs. M., aged sixty-eight, of Westport, of active habits, though of a spare build, and not unhealthy, while on a visit to town was suddenly seized on March 20th, 1887, on her return from a drive in her carriage, with shortness of breath. She complained of a slight sense of tightness or oppression across the chest, but was not aware of any palpitation nor did she feel ill, and she was able to walk up three flights of stairs to her bed-room. Her daughter noticed some pallor and sent for me. I found her as described. Her pulse was 180, small and running. The tension was low, while the first sound was shortened and accompanied by a systolic murmur, the second sound being more marked and ringing, and by it the heart's pulsations were counted by the stethoscope. Rest in bed, and digitalis and brom. potassium with carminatives, were soon followed by relief, and in three hours, when I again visited her, her pulse had fallen to 120, and she was generally better. The next day the heart and pulse were normal, 78. The state of the valvular lesion could now be readily made out, and I satisfied myself she had mitral regurgitation and dilatation of the aorta with rigid valves, probably all due to atheroma. There was no evidence of dilatation. A return of the tachycardia occurred again a few days later without any cause, while she was indoors, but it was of shorter duration, and did not last more than six hours. The patient thought very light of her ailment, and seemed to think too much was made of it.

There was no return during the fortnight she remained in town, and she was able to return to the West of Ireland. Of her subsequent history I learned that she had for three years following been able to go about her place and to take moderate walking and driving exercise, though with attacks of her heart, and that finally she "died of her heart," although of the exact nature of the fatal malady I am unaware.

CASE II.—*Recurrent Paroxysmal Tachycardia*—Mrs. D., aged fifty-four, of a nervous type, without children, consulted me in 1894, and was under my care off and on from January to June, with various symptoms connected with cessation of menstruation—e.g., flushings, palpitations—and she fell into flesh. She had a fresh complexion, and looked ten years younger than her age. She frequently complained of pains under the sternum, and thought, as many ladies do at that climacteric period, that her heart was diseased. I mention this because it made me pay particular attention to that organ, and I was quite satisfied that the heart

was sound in every respect. I made her take active exercise, and by it and other appropriate treatment she lost a stone in weight in six months and was then in excellent health. I saw her occasionally during the next two years, looking fresh and well.

On January 7th, 1897, I was urgently summoned to see her by Dr. Byrne at 11 o'clock p.m.; she was in bed, well propped up with pillows, and though her face had a frightened, nervous expression, it did not strike me as that of grave disease. She was disinclined to speak, and evidently thought her "end was near." On taking the radial I was astonished at its rapidity; it was past counting, but the beats of the heart were over 200; Dr. Byrne thought 240. The respirations were quite easy, about 30. The lady had had some worry with her servants that day, and also had some dyspepsia. The attack was preceded by a little pain under mid-sternum.

Remembering my former case, I gave a hopeful prognosis, and the treatment suggested consisted of *sp. am. arom.*, *tinct. digitalis*, *brom. pot.*, and *infus. valerian*.

The attack lasted two hours and suddenly stopped. A second attack occurred in April, 1897, in the evening, and it was practically like the first. My friend, Surg.-Lieut.-Col. Crean (retired), happened to be spending the evening with her. He tells me that until she said the attack was on—and it was on for a couple of hours before she spoke—he noticed nothing amiss with her beyond the fact that she was a little more silent than usual, and he thought no one else in the room had observed it, as she continued to play the game of whist without comment. He did not try to count the pulse, so as to avoid unnecessary alarm, but it was very rapid. He urged her to lie down, but she felt more comfortable sitting up. "The strangest feature in the case," he writes, "was the rapidity with which the attack vanished. Within ten minutes after first feeling the pulse she quietly remarked 'it is gone now,' and the pulse had fallen to about 80."

This lady went abroad in the autumn of 1897, and spent thirteen months travelling, and visited Homburg, Rome, and the Italian Riviera. While in Nice she learned to ride a bicycle. During this time she had no return of tachycardia. Since coming home however, she has had a few attacks similar to those described, only she is not now alarmed. She told me (February, 1899) that she attributes them to slight stomach derangement and annoyance with servants, that the attack does not occur at the time of the worry, but generally at bed-time, and is always ushered in by a slight sense of pressure under the sternum. She was in good

health when I saw her, and I again examined the heart and found it normal in all respects, neither dilated nor hypertrophied, and free from all adventitious sounds. She asked about cycling, and I advised her to continue the exercise.

These two cases illustrate recurrent or paroxysmal tachycardia—one in a case of pre-existent and permanent organic valvular and arterial disease; the other in an organ apparently healthy, and yet neither to be attributed to direct cardiac lesion nor followed by heart failure.

In striking contrast I now refer to Case III., where the tachycardia was persistent for 16 days, where its cause seemed to be obscurely due to an acute febrile state, and where its termination was fatal on 16th day by almost universal arterial thrombosis, and by gangrene of both lower extremities.

CASE III.—*Extreme Persistent Tachycardia of 16 days duration, ending in Gangrene of the Lower Extremities*—E. E., aged twenty-three, housemaid, residing at Lansdowne-road, was admitted to Sir Patrick Dun's Hospital on 17th January, 1899, after four days' illness. Dr. Samuel Bradshaw, Dalkey, Co. Dublin, who sent her to hospital, stated that on the 15th he attended her for a very sore throat, with temperature 103° , pulse 140, and that next day the temperature rose to 104° . There was no evidence of either diphtheria or scarlet fever.

On admission her tongue was coated with a white fur, the tonsils, pillars of the fauces, and the pharynx were red and swollen, but were free of all exudation and ulceration. There was very little dysphagia; there was no eruption; and she made no complaint, except of great weakness. The temperature on admission was 100.4° , and rose at 6 p.m. to 101.5° . The pulse was 160, respiration 32 (and very quiet), and at night 146 and 32. The urine was acid, loaded with lithates, sp. gr. 1030, and contained some albumen. With the exception of the albuminuria and the quick pulse it looked like a case of ordinary *cynanche tonsillaris*. The following day (sixth of her illness) the temperature fell to 97.6° in the morning, and rose to 98.4° in the evening. The pulse, on the other hand, rose to 200, and this high rate was maintained for the succeeding eleven days.

The following chart will best explain its course:—

Date	Temperature	Pulse	Respiration	Day of Illness
1899 Jan.				
17	M., 100.4° E., 101.5°	160 146	32 32	5
18	M., 97.6° E., 98.4°	200 196	— 23	6
19	M., 96.4° E., 96.4°	220 216	— 32	7
20	M., 96° E., 96°	184 208	— 34	8
21	M., 97° E., 98.4°	196 204	34 32	9
22	M., 96° E., 98.2°	200 206	36 36	10
23	M., 97.8° E., 98.6°	208 208	— 40	11
24	M., 97° E., 100.2°	238 212	— 30	12
25	M., 100.2° E., 102°	226 220	34 28	13
26	M., 98.4° E., 100.6°	228 220	38 38	14
27	M., 100° E., 100°	228 220	34 36	15
28	M., 100°	228	30	16

This table shows an extreme degree of tachycardia, reaching on several occasions 228, and on three, at the hour of my visit, about 11 a.m., it rose to 240 in the minute. It was by no means an easy thing to count the pulse at the wrist, but by palpation over the heart and by auscultation the rate was made out with less difficulty. The cardiac impulse was most readily felt *above* the fifth rib. The radial vessel was very compressible and small at all times, but on the last four days it became at times imperceptible. The sounds of the heart were also very short and abrupt, the first having lost its longer and deeper natural tone. The cardiac dulness was normal. One of the most remarkable features was the *want of all consciousness* on the part of the patient of any heart trouble—palpitation, irregular action, fluttering, angina, &c., and she was able to breathe quietly, converse, and move from side to side, and to sit up without any dyspnoea or distress. On one or two occasions she had slight vomiting of a watery nature, the bowels were easily regulated by an enema, and her sleep was fair. The treatment was chiefly expectant, though quinine and tinct. digitalis were employed, but without any effect on the heart's rate.

On 20th January (eighth day) she was feeling very much better. She was cheerful and bright, and enjoyed a cup of tea for breakfast

and a light pudding for dinner. In fact to all appearance she was recovering most satisfactorily. That day the bowels moved three times, and she slept but little in the night following. Now a remarkable change for the worse took place. At the time of my visit on 21st she complained of cramps in her right leg, in the calf and the outside of the leg. Pressure of the muscles and nerves pained greatly, and she was unable to move the toes. Over the inner aspect there was diminished sensation, but cutaneous sensibility was exaggerated above a hand's breadth below the knee. Some watery extract of opium was ordered every third hour.

January 22nd.—The loss of sensation in the right leg was still more pronounced, anæsthesia being absolute from three inches below knee, while pain was acute behind the knee. The smallest movement or touch caused her to cry out. The leg presented a marbled, deep purple-red colour, measured an inch more than its fellow, and was colder than normal. About noon she had agonising and sudden pain in the calf of the *left* leg, so that she writhed in suffering, and got no relief until two half grains of morphia were hypodermically injected and the leg wrapped in hot cloths. It was noticed that the left foot was like white or yellow marble, quite cold (icy or cadaveric) and insensible to touch or pain, and motionless. Across the instep and lower tibial region small superficial veins, partly filled with blood, stood out like delicate tracery on the waxy background. No pulse could be felt in either tibial vessel.

It was plain that dry gangrene had set in, and the toes were already shrivelling up and withered. On attempting to extend the toes or flex the ankle it was found to be stiff as the limb of a corpse in *rigor mortis*, and this was exactly the condition, since in 24 hours the joints and muscles had become supple again.

January 23rd.—The right leg, the seat of the first thrombosis, was deeper in colour, but the circulation was better established, and sensation had returned three inches lower down from the knee, while the line of demarcation was more sharply defined. On the other hand, the left leg was further affected, and the deep purple colour of the posterior parts of the calf now extended above the knee for six inches, and the internal saphenous vein was thrombosed and cordlike up to the saphenous opening. External heat kept up the temperature of the limbs, and morphia in large doses, frequently repeated, gave ease. The urine, which was acid all through, contained a large quantity of lithates, and also some albumen and blood; sp. gr. 1038. The blood and albumen increased on 25th January, and broken down corpuscles and granular *débris* were seen under the microscope, but no tube casts. There was some

febrile reaction to-day—up to 100°. The left thigh measured 19½ to 17½ in. on the right, and from the knee down dark blotches with some dry vesicles at the ankles told that gangrenous mummification was advancing. The toes are black and dry.

January 26th.—The right leg shows improvement as to the diminished area of insensibility, as sensation to touch has extended down three inches on the outside, and a touch can be recognised almost to the inner malleolus. To-day fine crepitant râles are audible over the front of the right lung, and on January 27th they were over the left, and bloody sputa were brought up. She was not disturbed to examine the backs of the lungs. The respirations were 38 in the minute. The urine contained a little indican, and perhaps less blood, and was of a lighter colour.

January 28th.—Without further change in the general condition the patient died of asthenia. The painting [exhibited], which was taken two days before death, gives a realistic picture of the state of the lower part of each leg.

The autopsy was made by Professor O'Sullivan, Pathologist to Sir Patrick Dun's Hospital, and by Dr. Littledale, his Assistant in Trinity College, Dublin, to whom I am deeply indebted also for their most exhaustive and careful microscopical and bacteriological investigation. The following was the result:—

The *Heart* was apparently normal; the cavities contained soft clots. The myocardium was perfectly healthy, and so were the valves.

The *Vessels* of the lower extremities.—Exactly at the bifurcation of the common iliacs a dry, fine, greyish-red thrombus was found; the right common iliac contained a very small clot, but the left iliac, left femoral, and all its branches, were filled with a firm clot. No thrombosis was present in the right popliteal.

Lungs and Pleuræ.—Fine fibrinous exudation on the surface of both pleuræ, and hæmorrhagic effusion was present in the right pleural cavity. The branches of the right pulmonary artery were thrombosed, and almost the whole of the lower lobe was consolidated by infarcts of a dark red and black colour; the surface of the affected part was raised above the general level. A large infarct was in the lower lobe.

Kidneys.—The left was normal, the right contained an infarct. The liver was fatty and congested. The spleen small and pale.

There was a complete absence of any micro-organisms—cocci or bacilli—in any portion of the clots or infarcts or tissues.

The *Sciatic Nerves.*—The *left* was necrosed and would not stain, but it was free from degeneration; the *right* was healthy.

The Spinal Cord.—The ganglionic cells in the anterior cornua were deeply pigmented. The anterior nerve roots were degenerated on the left side, the posterior roots in both, but chiefly on the left side.

This last case presents a terribly sad picture of a condition but very rarely fatal; and naturally the question presses, Was the tachycardia of sixteen days duration the cause of this young and previously healthy woman's death? Did the rapid action of the heart, and, presumably, the imperfect emptying of the ventricles and auricles cause *ante-mortem* clotting in these chambers of the heart, and thereby induce arterial embolism—almost universal? Or, Were the tachycardia and the cardiac stagnation—alike the result of a toxin—connected with the inflammation of the throat and the primary fever which ushered in her illness? Or again, Was the tachycardia an accidental concomitant of this young woman's illness—might it have come on at any time unprovoked? and had the fatal thrombosis no closer connection than that of pure accident?

My own idea—it is but hypothetical—is that the primary fever and sore throat were of either a diphtheritic or influenzal nature; and that the "heart-hurry" was the result of toxic infection of the cardiac ganglia; that owing to the same toxic influences—as we see in diphtheria and fevers—the muscle of the heart became weakened, and the thrombi in the auricles and ventricles becoming detached caused embolism of the various arteries throughout the body, and, in particular, of the iliac and femoral arteries, which led to gangrene of both legs.

The number of cases of paroxysmal tachycardia which ended fatally are very few, and those in which *post-mortem* results are published still fewer. Brieger¹² states that of 30 cases there were but 2 in which a *post-mortem* examination was reported, and these presented entirely negative results as to its pathology.

Gibson¹³—the most recent writer on heart diseases—states there are only 6 cases which have been examined after death. It is not clear that Brieger's two cases are included among these six—presumably not. In one there was fatty degeneration of the heart-muscle; in two there was chronic interstitial myocarditis; and in three there was cardiac dilatation. He adopts Dr. West's view that the myocardium is the seat of the lesion, and thinks the nerve

endings to be implicated, although no instance of any such condition of the nerve endings has been reported.

In this connection it is interesting to note that in my case there was a complete absence of any lesion of the myocardium.

All observers seem to think that permanent tachycardia is a forerunner of graver cardiac lesions. It can never be looked upon as a favourable sign, as it signifies arrest of the heart's action, and leaves to be feared the development of symptoms of weakness and exhaustion.

Sudden death occurred in Sir Thomas Watson's case, also in one of Dr. Bristowe's cases, where a young man, in seemingly good health at the time, died while playing the piano.

Bouveret gives 8 deaths out of 27 cases—2 by syncope, 2 by asystolic collapse, the rest by pulmonary congestion and intestinal hæmorrhage.

I can find no record of any case of tachycardia in which gangrene of the extremities occurred.

Brieger gives one case in which thrombosis of the right jugular vein was found, and also infarction in the lungs and kidneys, but the woman, aged thirty-three, had had dropsy and heart troubles for many years, and was jaundiced when she died, and the heart was widely dilated.¹²

Balfour met a case of tachycardia in a middle-aged lady, which was preceded by severe mental emotion, and was followed by a threatening of symmetrical gangrene of the finger-tips; but from this she completely recovered.

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ART. II.—*Three Cases of Diabetes Insipidus.** By J. LUMSDEN, M.D. (Univ. Dubl.); Physician to Mercer's Hospital.

HAVING had the singular good fortune to have had during the past year under my care at Mercer's Hospital three cases of what I regard as genuine examples of diabetes insipidus (that form spoken of as hydruria by Ralfe), and as the affection is undoubtedly a rare one, which is proved by the fact that only eight cases appeared in the London Hospital Records from 1876 to 1895, and Ralfe, who wrote the article in Clifford Allbutt's "System of Medicine," only collected sixty-nine authentic cases, and Roberts seventy-seven, I therefore thought the notes of my two cases would be of some interest to this Section, although I have little fresh to add in throwing light on the ætiology or pathology of the affection. My third case I owe to the courtesy of Dr. Burgess, who kindly allowed me to take her into hospital, the full notes of which case you may remember were read in an interesting paper by Dr. Burgess two years ago at a meeting of this Section.

CASE I.—M. M., aged nine years, admitted June, 1898; family history unimportant. His father, a healthy labourer, died from influenza after a few days' illness. Mother, a charwoman, is apparently healthy; several healthy brothers and sisters living. I could discover no history of any constitutional delicacy in any branch of the family after careful inquiry. The boy is fairly well nourished, blonde, of a fresh, healthy complexion, bright, clear eyes, and fairly moist skin. He has a right inguinal hernia, which was unsuccessfully operated on five years ago, and he at present wears a truss. Tongue and lips very dry, and he complains of an insatiable thirst; appetite very poor; vomits occasionally after solid food; urinates frequently, and shivers very often before micturition. Physical examination reveals no abnormality; heart's action somewhat irregular and excitable; pulse intermittent at times, of low tension, its rate varying from 75–110. Complains frequently of headache, which is sometimes very severe, causing him to cry, and lasting for nearly a day at a time; is not referred to any particular part of the head. He is of an excitable and

* Read before the Section of Medicine, in the Royal Academy of Medicine in Ireland, on Friday, May 19, 1899.

emotional temperament; flushes up when spoken to. Increased patellar reflexes; quadriceps reflexes slightly present, and an attempt at ankle clonus; sensation normal; temperature normal, sometimes subnormal.

About six or eight months ago it was first noticed he was drinking large quantities of water; it apparently came on gradually, and did not follow an illness or accident, although a history of a fall on left side of head three or four years ago is to be obtained. His thirst became greater, and if clean water could not be found he would drink milk, buttermilk, and even the soapy water from his mother's washing tubs. As far as I can gather, the polydipsia first appeared on admission; he drank from 560 to 660 ounces of fluid in twenty-four hours; the greatest quantity consumed in one day being 860 ozs. = 43 pints. Subsequently when his allowance was restricted in amount he would run to the bathroom when the nurses' backs were turned and drink from bath tap, and on two occasions he was seen to drink his own urine. He invariably drank more than he passed; the amount passed, however, was hard to measure accurately, as he frequently wet his bed. He voided from 500 to 600 ozs. in 24 hours, the greatest quantity measured for one day being 750 ozs. (37 pints). The urine was of a pale greenish or bluish colour, alkaline, or very faintly acid in reaction; sp. gr. 1001-1002. No albumen or sugar was ever discovered, although daily examined for a period extending over five months. No increase of phosphates, and nothing abnormal found microscopically. The urea varied in amount from 150 to 600 grains in 24 hours, and calculating from Ralfe's table of physiological urea excretion estimated from weight and age, which takes into account the active nitrogenous metabolism of youth, the amount voided at first was distinctly excessive, especially as at that time his appetite for albuminous and solid food was very poor, his diet being entirely milk. Eyes examined by Mr. Story revealed no abnormality; blood normal. His tonsils, which were chronically enlarged, were removed by Mr. Maunsell, and post nasopharynx cleared of some adenoids which existed.

■ In this case result of treatment was altogether disappointing, although when finally discharged last February his general health was wonderfully improved, weight increased, appetite good, and all symptoms disappeared; yet the polyuria and polydipsia were still excessive—drinking from 300 to 400 ounces, and passing about 300 ounces daily.

During his stay in hospital I tried him with the following treatments:—Infusion valerian, valerianate of zinc ($\frac{1}{4}$ grain thrice daily to 12 grains in 24 hours), bromides, arsenic, ergot with iron, cod-liver oil and tonics, antipyrin, opium, codeia, belladonna, guaiacol, galvanism, phosphoric and nitric acids, and blisters to nape of neck and epigastrium. Some of the drugs in this very formidable list appeared to give some temporary relief, but nothing more, and his improvement, such as it was, I attributed to the effects of hospital life, and the altered hygienic surroundings and good food.

CASE II.—P. R., aged sixty-four years, labourer, admitted March, 1899. Family history good. Father and mother lived to be over eighty. Three healthy brothers living. Has been a very heavy drinker (of stimulants), chiefly beer, all his life. He says for the past twenty years he has complained of excessive thirst and frequent micturition; it came on without any apparent cause; latterly has become more excessive. Ten years ago he states he was in the habit of drinking upwards of twenty pints of beer daily. He gives a history of a violent blow on the head which rendered him unconscious for some hours twenty years ago, and it was immediately after this he first noticed the polydipsia. Since then he has had several falls on his head, but none apparently of a serious nature.

In appearance he is a healthy, vigorous-looking man, 12 st. 4 lbs. in weight, of ruddy complexion, healthy aspect.

He has lost nearly a stone during past few months. Skin very dry; complains of dryness of mouth; no excessive flow of saliva; tongue covered with a dark brownish fur; bowels regular; sleeps well, and appetite good, but not excessive. Physical examination reveals no abnormality except a musical symbolic murmur occasionally to be heard at the heart's apex. No cardio-vascular evidence pointing to granular kidney. Heart's impulse feeble. Pulse 72, regular, and of distinctly low tension, and no evidence of hypertrophied walls. Pupils equal. Reflexes sluggish. Complains of frequent occipital headache, and pains in lumbar region, the former very acute at times. Quite contented while allowed to stay quiet and in bed, but complains of being easily tired and feeling nervous when up; occasionally complains of nausea, though never vomits. Thirst is excessive, drinking from 260 to 360 ounces in twenty-four hours, and passing about twelve pints of a

pale-coloured urine; density 1003; very faintly acid or neutral; no albumen; no sugar; inosite is present. No casts or other morbid product to be discovered microscopically. Urea from 240 to 516 grains in twenty-four hours.

Dr. Story reports commencing cataract left eye. Signs of chronic glaucoma; visible pulsation of vessels without any signs of neuritis or retinitis.

His age, alcoholic history, occipital headache, and polyuria naturally makes one suspicious of granular kidney, but careful and repeated examinations fail to detect the presence of albumen or tube casts; this with the low tension pulse, the absence of all ocular and cardio-vascular symptoms, the degree of polyuria which is in excess of that generally associated with contracted kidney, appear to me to justify the diagnosis of diabetes insipidus. Since his admission he has been tried with valerianate of zinc, infus. valerian (double strength), phenazonum and nitric acid; the former diminished the polyuria and polydipsia by half, but did not reduce to normal.

Dr. Burgess has very kindly given me permission to mention the following case, the notes of which have already been read by him before this Section:—

CASE III.—A girl aged seventeen. History of a severe fall on the back of the head four years ago, shortly after which polyuria and polydipsia appeared. She used to drink upwards of twenty pints daily. When admitted under my care she was passing and drinking about fourteen pints daily. No symptoms of granular kidney whatever. Pulse distinctly low-tensioned. Urine light greenish colour; sp. gr. 1002, neutral; no albumen; no glucose; no inosite. Urea greatly decreased in quantity.

I tried her first on several drugs without any improvement resulting. I finally ordered valerianate of zinc, commencing $\frac{1}{4}$ gr. thrice daily, and increasing gradually till she was getting 22 grs. in twenty-four hours. After a week of this treatment the amount of urine voided began to diminish gradually, and at the end of a month it had reached the normal for the first time since the affection declared itself. She remained in hospital subsequently for over a month, the treatment being continued for a week or two and gradually withdrawn. She has been under my constant observation ever since, and has been taking syrup of the iodide of iron and cod-liver oil. Her general health has much improved. She has put on weight, and has been drinking and passing a normal quantity of fluid. How long this normal state will last, or

whether she will relapse, I cannot say; but I think it is very interesting to note the marked improvement while on the drug given in increasing doses.

The same drug in my other cases, although apparently causing some improvement at first, finally had to be stopped, either because it disagreed or failed to reduce the passage of urine to the normal limit.

Diabetes insipidus is apparently a very rare affection—its ætiology varied, little known of its pathology, its treatment unsatisfactory, and its course uncertain; sometimes influenced by treatment, and even cured; at other times persisting for a number of years, without any visible deterioration of health beyond a feeling of weakness and general malaise; and sometimes running an acute course, terminating fatally in a few months; and sometimes the affection disappears of its own accord untreated.

Its origin is evidently nervous, and is supposed to result from a want of inhibitory control of the vaso-motor renal nerves. Injury to the nervous system, such as a fall or knock on the head, a violent emotion, such as fright or a sunstroke, is its not infrequent antecedent. Tumours of the brain, and lesions chiefly about the neighbourhood of the fourth ventricle, have been met with in several cases, and it will be remembered in one of Bernard's famous experiments on animals puncture of a certain spot in the floor of the fourth ventricle near that region, injury of which causes glycosuria, produced polyuria.

The most reasonable view, as expressed by Osler, is—that it results from a vaso-motor disturbance of the renal vessels, due either to—

1. Local irritation, as in a case of abdominal tumours;
or to
2. Central disturbance, in the case of brain lesions;
or to
3. Functional irritation of the centre in the medulla,
giving rise to a continual renal congestion.

Clinically it may be divided into five forms—

1. That in which the aqueous superflux is most marked—called hydruria (by Willis).

2. Cases attended with a copious discharge of urine with a deficiency of urea—anazoturia.
3. Cases accompanied by a superabundance of urea—azoturia.
4. A form described by Tessier as phosphaturia, or phosphatic diabetes, which he distinguished from azoturia. This form is associated with certain dyspeptic conditions, and is characterised by a considerable increase in the excretion of phosphoric acid in the urine, while the urea is not increased in amount.
5. And lastly, a form described by Dr. Fuller, and called by him baruria, which is characterised by a general increase throughout of the solid urinary constituents, whilst the aqueous secretion remains tolerably constant.

ART. III.—*Clinical Investigations on Widal's Reaction as a Diagnostic in Typhoid Fever.** By H. E. LITTLEDALE, M.B.; Assistant in the Pathological Laboratory, Trinity College, Dublin.

DURING last year, while Resident Medical Officer in Sir P. Dun's Hospital, I had the opportunity of making clinical investigations on what is generally known as Widal's test for enteric fever, and examined the blood of 120 cases of different kinds. I must, however, specially mention that it was the clinical diagnostic value of the test and nothing else that I wished to try.

The methods I adopted throughout were briefly these. A tube of bouillon was inoculated with typhoid bacilli from a stock agar culture, and kept at 37° C. for from 8 to 20 hours, and examined just before use to see that the bacilli were active and free from clumps. Blood was drawn from the patient's ear lobe by making a stab with a needle and squeezing out the blood into sterile glass tubes, which I made over a Bunsen burner, and the ends of the tubes were then sealed in the Bunsen flame. When the serum separated out

* Read before the Section of Medicine, in the Royal Academy of Medicine in Ireland, on Friday, May 19, 1899.

it was expelled from the tubes on to a large sterilised microscope slide by breaking off one end of the tube and heating the other in the flame. The slide was sterilised simply by heating it in the flame, and then letting it cool. On the other end of the slide a certain number of the typhoid bouillon drops was measured out with the platinum loop, the loop then heated out and let cool, and a drop of the blood serum taken up on it, and mixed with the bouillon. A hanging drop was then made from this mixture and examined with a Leitz No. 7 objective immediately, and at varying intervals up to two hours, and sometimes longer. At first I used to take the blood on filter paper, let it dry, and get the serum by rubbing up the dry blood stained part with sterile bouillon, but I gave this up, as it was impossible to estimate what proportion of serum one had in the solution. The results I obtained I classified into positive, negative, and doubtful: positive results being those in which the most of the bacilli were matted together into clumps appearing in a typical case about one-third the size of a threepenny piece with a Leitz 7 objective 3 eye-piece and 170 mm. tube length. Besides this clumping action, the motion of the bacilli was usually very considerably slowed, but this is not always so, as I came across some undoubted typhoid cases of a severe clinical character, in which the unclumped bacilli remained exceedingly active for hours; and again, there were a few cases not typhoid which caused extreme slowing of motion in the bacilli, but no clumps. I also considered a result positive when the clumps were very much smaller than those above-mentioned, but very few bacilli left unclumped.

A doubtful reaction I considered was one in which a few small, loose groups of bacilli formed, usually with slowing of motion, but no, or at all events very few, typical clumps. By groups I mean masses of bacilli lying rather side by side, and not in the tangled mass that a clump is, and from which bacilli occasionally disengaged themselves, and wandered away.

A negative reaction was one in which there was no trace of clumping. The maximum time limit I adopted was two hours, and if no clumping had taken place then I considered

the reaction negative, but I occasionally did not get time to examine the hanging drops after two hours, and sometimes had to do it after as late as three hours or later.

This is my own standard, which may, of course, be a fallacious one. The proportion in which the blood serum and bouillon ought to be mixed to give a standard reliable result is a very doubtful question. At first I used to use what I called a 1 to 9 dilution—that is, one drop of blood serum mixed with 9 drops of bouillon—but Durham and others have shown this to be fallacious, and my own experience is that it is useless clinically except where it gives a negative result. I then adopted a 1 to 39 dilution, but I think this is also open to error, though to a much less degree, as I only had two cases which were not typhoid which gave a doubtful reaction with this dilution.

Throughout the entire series of investigations I used the same stock culture of typhoid bacilli growing on agar.

I shall now describe the results obtained from a clinical point of view, and to do this I have necessarily had to arrange them under several different headings.

The first series is one of 42 cases, which were clinically undoubted typhoid, and usually obviously diagnosticated on admission. Every one of these cases gave an absolutely positive Widal reaction. Some, however, were only tested with the $\frac{1}{9}$ dilution, but most of them with the $\frac{1}{39}$ dilution. All of these cases were in the second week of the disease or later, with the exception of five, two of which were on the fifth day, one on the sixth, and two on the seventh day of illness. These were the only cases in which I was certain of the early date of the disease, and all of them were tested with the $\frac{1}{39}$ dilution, but I am unable to say if the reaction can be obtained earlier than the fifth day.

The second series is one of nine cases which were clinically doubtful, either for a time or throughout the entire stay in hospital, while the Widal reaction was absolutely positive in every case. I shall give a very short account of each of them.

The first case was a man who was admitted with the symptoms rather of rheumatic fever than of typhoid, with severe pains and swelling in his shoulder joint, but the

onset of his illness and its subsequent course was very like typhoid. He had, however, no diarrhoea, and had only two spots resembling typhoid rash. His spleen was considerably enlarged. He gave an absolutely positive Widal result in the third and fourth weeks, but he was taking salicylate of sodium when the test was applied, and I do not know whether that may not cause clumping.

The second was a case which turned out an obvious typhoid case, but had no signs of typhoid fever, except high temperature for several days after a positive test result was obtained.

The third case, similar to the last, proved to conclusion *post-mortem*.

The fourth case was also similar to the second.

The fifth case, sent in late one evening as scarlatina, with very sore throat and slight redness about the neck, gave an absolutely positive result that night, and turned out to be an obvious typhoid case, and not scarlatina.

The sixth case, sent in during what was stated to be the third week of illness, gave an absolutely positive result on day of admission. He never developed any typhoid signs, except rather severe bronchitis and delirium, and his temperature dropped by crisis eleven days after admission, and remained normal till he went out.

The seventh was a case I know nothing of clinically, but was, I believe, a very doubtful one: the reaction, however, in the second week was quite positive.

The eighth case was admitted with a history of several weeks' illness, with absolutely no sign of typhoid, except a slight rise of temperature, which reached normal a few days later, so this case was evidently at the end of his illness on admission, also absolutely positive Widal.

The last case was one which never had any signs of typhoid but headache and an irregular temperature for three weeks after admission, but gave absolutely positive results on several occasions.

All of the cases which remained doubtful throughout were examined with the $\frac{1}{32}$ dilution, but except in the case of the last, I do not know if they ever had typhoid before. The last-mentioned case never had any illness before that he could recollect.

The next series is one of eight cases in which the clinical diagnosis was doubtful; the Widal reaction was also doubtful. Most of these cases were examined only with the $\frac{1}{8}$ dilution, and several of them can hardly be considered doubtful, but I think it best to put all cases in a separate group when there was any sign, however small, of clumping.

The first case was a boy with symptoms very like typhoid, but without any diarrhoea, spots, or enlarged spleen. He, however, developed physical signs of pneumonia, three days after admission, in right upper lobe, and temperature started to fall by a very slow crisis next day. He never had any symptoms or physical signs of pneumonia prior to this. Widal on fourth day, $\frac{1}{8}$ dilution; 20 hours active culture gave, as result, no effect after one hour; after two hours, motion quite active; a few small clumps. Same on sixth day. On sixteenth day $\frac{1}{8}$ dilution, nine hours very active culture, a few clumps, and motion slowed after two hours. No change after two and a half hours with $\frac{1}{8}$ dilution.

The second case was a man aged fifty-three, which no one would ever have diagnosticated as typhoid from his symptoms and signs. He came to the dispensary some days before admission with headache, and history of being ill for several days, with marked constipation. His temperature was 100° F., but he refused to come in that day. Three days later, however, he was admitted, with a temperature of 100.4° F., thickly-coated tongue, bowels moving only very slightly, but no other symptoms or signs, except a feeling of incapacity to work. His temperature fell to normal the day after admission, and remained so for two or three days, then rose again to 101° F. for two days, and after wavering about 100° F. for a week longer, it ultimately became quite normal. Constipation seemed to be the cause of his illness, as when his bowels were got into regular order he got quite well. He never had any illness before, except "fever and ague," 30 years previously, in Mauritius. On sixth day of illness, with a ten-hour very active culture, $\frac{1}{8}$ dilution, there was an immediate formation of a few small clumps, and the motion

was slowed, but it was just the same three hours later—a condition I never saw in undoubted typhoid, as the clumps always increased in size and number. A $\frac{1}{8}$ dilution gave immediate formation of small clumps, which became very much bigger after two hours.

Examined again on the 10th day with a 20 hours very active culture, $\frac{1}{8}$ dilution, the motion was unaffected, and only a few small clumps formed, and one or two large groups after three hours.

The next case was one which gave doubtful reactions on several occasions with $\frac{1}{8}$ dilutions, but absolutely negative with $\frac{1}{16}$ dilution. This case had a very typhoid-like onset, and when I saw her on admission she looked a very probable typhoid case, but beyond headache, constipation, coated, dry tongue, and high though irregular temperature, she never developed any other signs of typhoid, and after running a course of about four weeks with this irregular temperature she became convalescent, and was soon quite well.

I have since heard that she now has a slight cough and pain in her side—that is, eight months after the above attack. So it may possibly be an obscure tubercular case.

As all the other doubtful reactions were only examined with the $\frac{1}{8}$ dilution I shall not detail them, as such results are of no value, as the previous case well shows.

The fourth series consists of 20 cases which were clinically doubtful, in which the Widal reaction was absolutely negative even in $\frac{1}{8}$ dilution. Some of these cases were treated as typhoid for safety sake in spite of the Widal reaction, and quite rightly I admit, but this shows their close resemblance to typhoid, although no single one of them was a typical typhoid case.

I shall just cite one of these cases as it shows the value of the Widal test. This was a case of a child with acute tuberculosis which came in with a history exactly like typhoid, and a temperature of 104.0° F. The case was diagnosticated acute tuberculosis chiefly from the extreme cyanosis, out of proportion to any of its physical signs. There was, however, profuse diarrhoea, large spleen, distended abdomen, but no spots.

After two weeks the child died, and general tuberculosis

was found *post mortem*, and no sign of typhoid lesions. The Widal reaction was absolutely negative, even with 1 in 10 dilution. I think we have here an instance of the value of the test when we can separate with certainty acute tuberculosis from typhoid.

The fifth series was 28 cases, medical and surgical—in fact any case which had no suspicion of typhoid—and in every one of them with a $\frac{1}{8}$ dilution the result was negative.

The sixth series is one of five typhus cases, all of which gave an absolutely negative result. One of them, however, is worth citing, as it shows the uselessness of the $\frac{1}{8}$ dilution. This was a man who had been two weeks ill, who had every possible sign of typhus. I only saw him once, with Dr. Falkiner, so cannot relate the subsequent course of his case. Examined in the second week, this man gave an absolutely negative reaction with a $\frac{1}{32}$ dilution, and an equally absolutely positive one with the $\frac{1}{8}$ dilution, the same culture and serum being used in both cases, and the tests applied just after each other.

The seventh series consists of three cases supposed to have had typhoid two years, six years, and four months ago, all of which gave an absolutely negative result.

The last group is a curious one, and consists of three diphtheria cases.

The first was a case being treated with antitoxin, the last dose of which had been given ten days previously. This case gave an absolutely negative result with $\frac{1}{8}$ and $\frac{1}{32}$ dilutions.

The second case had received its last dose of antitoxin three days previously. Examined with a 40 hours culture, which, however, was very active and free from clumps, and $\frac{1}{32}$ dilution gave an immediate slowing, almost cessation, of motion, and few small clumps. My only subsequent note, however, is “very large clumps ten hours later.” With $\frac{1}{8}$ dilution motion was stopped and very large clumps were formed, which were visible to the naked eye an hour later.

The next case had received 3,000 units of antitoxin eleven days previously! typhoid culture, very active; ten hours old; $\frac{1}{32}$ dilution gave immediately great slowing of motion and large clumps, one hour later the unclumped bacilli appeared

rather more active; $\frac{1}{8}$ dilution gave immediate cessation of motion, and enormous clumps quite filling up the field.

I next examined two bottles of antitoxin serum as to their agglutinative capability, having first proved the serum quite sterile. With the first bottle I merely mixed one drop of serum and one of bouillon together, and the result I find I have notified is "cessation of motion and clumps after two hours." The second bottle I tested with a $\frac{1}{8}$ dilution—*i.e.*, one serum, nine bouillon—and the immediate result was slowing of motion, no clumps; two hours later, however, there were numerous large and small clumps.

This agglutinative action is, I believe, common to the blood serum of horses in general, and not merely those that are immunised to diphtheria.

I have now concluded the list of cases which I examined, and I shall merely say a few words as to what I consider from my small experience the test is worth clinically, and also mention a few practical points in connection with its application.

The most valuable and reliable results which the test gives is its negative value, and, as far as my experience allows me to judge, I think if a case gives a negative result absolutely in the second week one may be certain that it is not typhoid.

As to the doubtful results, I believe they can be eliminated by using higher degrees of dilution and as young a culture as one can get. A six hours old culture is the earliest I have ever used, and, if all conditions are favourable, an actively growing culture should be obtainable in this time. There will, however, I am afraid, always be cases which are on the border line between positive and negative, and nothing but long experience and absolute ignorance on the part of the investigator as to the clinical course of the case will enable him to make up his mind, as it is impossible to give an impartial opinion when one is absolutely certain that a case is or is not typhoid clinically. It is for this reason that I have cited more or less in detail the results clinically and to Widal of the doubtful cases.

In conclusion, I shall just say a few words more about the methods of applying the test. Objections will be raised to

my method of mixing the typhoid bouillon and serum owing to the difficulty of getting a drop of constant size in the platinum loop, but this may be avoided and a uniform drop obtained by getting the loop quite full, and just let the drop touch the slide, and by this means a uniform drop is always obtained. Other methods in use consist in drawing up definite quantities of blood serum and typhoid bouillon into graduated capillary tubes, and mixing them as in Thoma's hæmocytometer; or a better method is first to dilute the serum, say twenty times, with sterile bouillon, and then mix a drop of it with an equal quantity of typhoid bouillon to get a $\frac{1}{40}$ dilution.

Personally I do not think these methods are sufficiently superior to the one I use to counterbalance the extra amount of trouble they entail.

A point one must be careful about in applying the test as I do is to be certain that the glass slide on which the serum and bouillon are to be mixed is quite cool, which takes several minutes after it has been heated for sterilisation in the flame.

The best method, I think, to get the serum from the tube—especially when one gets it in a vaccination-tube, and has only a limited amount at one's disposal—is to break off one end of the tube, hold the other end in a forceps, and hold a platinum loop edgeways to the broken end; then warm the other end gently in a spirit lamp flame, not a Bunsen burner, as it is too hot, and sends the serum out with a spurt. In this manner all the serum necessary will be caught in the loop.

ART. IV.—*Lecture on the Cerebellum.*^a By J. S. RISIEN RUSSELL, M.D., F.R.C.P.; Assistant Physician to University College Hospital, and to the National Hospital for the Paralysed and Epileptic, Queen Square, London.

It has been suggested to me that a brief account of some of the chief results, the outcome of my experimental work on the cerebellum, would be likely to be acceptable to the members of this Club, and that it would be well for me to indicate, as far as possible, what practical bearings these results have on the localisation of cerebellar disease in man. I propose, therefore, in the first instance, to ask attention to a few points in regard to the functions of the cerebellum, which are chiefly of interest to the physiologist, and I shall subsequently deal rather more fully with the experimental results which have a practical bearing on cerebellar localisation in man, and which are therefore likely to be of more interest to those of us, who, as physicians and surgeons, have to deal with diseases of the cerebellum.

In the course of my experiments it was necessary for me to produce various lesions of the cerebellum, the nature of some of which I show you by the aid of lantern slides which Prof. Scott will be kind enough to throw on the screen. Monkeys, dogs and cats have been used in the course of my investigations, but in that the most satisfactory results are obtained in the dog, I propose to show you photographs only of the lesions in that animal. The first slide is merely that of the normal cerebellum of a dog, which is shown with a view to refresh our memories with regard to the conformation of the organ in this animal. The following slides indicate some of the lesions produced during the course of the inquiry:—Total ablation of the organ, removal of a part or the whole of the middle lobe, ablation of one lateral lobe or of one lateral half of the organ, including one lateral lobe and the corresponding half of the middle lobe.

The time at my disposal will not allow of my discussing the questions which arise out of the results obtained by all of these operative procedures, so that we must content

^a Delivered at a meeting of the Dublin Biological Club, on Tuesday, April 11, 1899.

ourselves with a consideration of the phenomena which are met with after ablation of one lateral half of the cerebellum (see Fig. 1).

Of the results that are obtained by such a procedure, and which are more exclusively of interest to the physiologist, none is more striking than the effect which the ablation of the half of the cerebellum has on the excitability of the cortex of the opposite cerebral hemisphere. Two methods were adopted to test this: (1) The administration of absinthe by intra-venous injection so as to evoke general convulsions (I may remind you that in evoking such convulsions absinthe exerts its chief influence on the cerebral cortex); and (2) Excitation of the cortex cerebri by means of the faradic current.

In order that you may appreciate the effect which removal of one-half of the cerebellum has on the excitability of the opposite cerebral hemisphere, as evidenced by the character of the convulsions evoked by absinthe under such circumstances, it is necessary for me to first show you tracings of the convulsions evoked by absinthe in a normal animal whose cerebellum is intact. It is further necessary for me to explain how the tracings which I am about to show you were obtained.

To deal with the latter point first, it may be said briefly that the animal being under the anæsthetic influence of ether, the extensor muscles of the fore limbs were connected by means of strings with two of Marey's spring myographs of equal strength, the writing points of which were made to record on a blackened surface of paper stretched between two revolving cylinders, which were kept in motion by means of a clock. On this blackened travelling surface were recorded the contractions of the muscles during the convulsions evoked by absinthe, the essential oil of which was injected into the external jugular vein of one or other side of the neck in doses of two to five minims as the occasion required. Every care was, of course, taken to make the conditions as far as possible similar on the two sides in so far as the apparatus used was concerned.

Tracings thus obtained from the muscles of the fore limbs of the normal animal show that the behaviour of the muscles during the convulsions is similar on the two sides, and the

DR. RISIEN RUSSELL ON "THE CEREBELLUM."

Plate I.

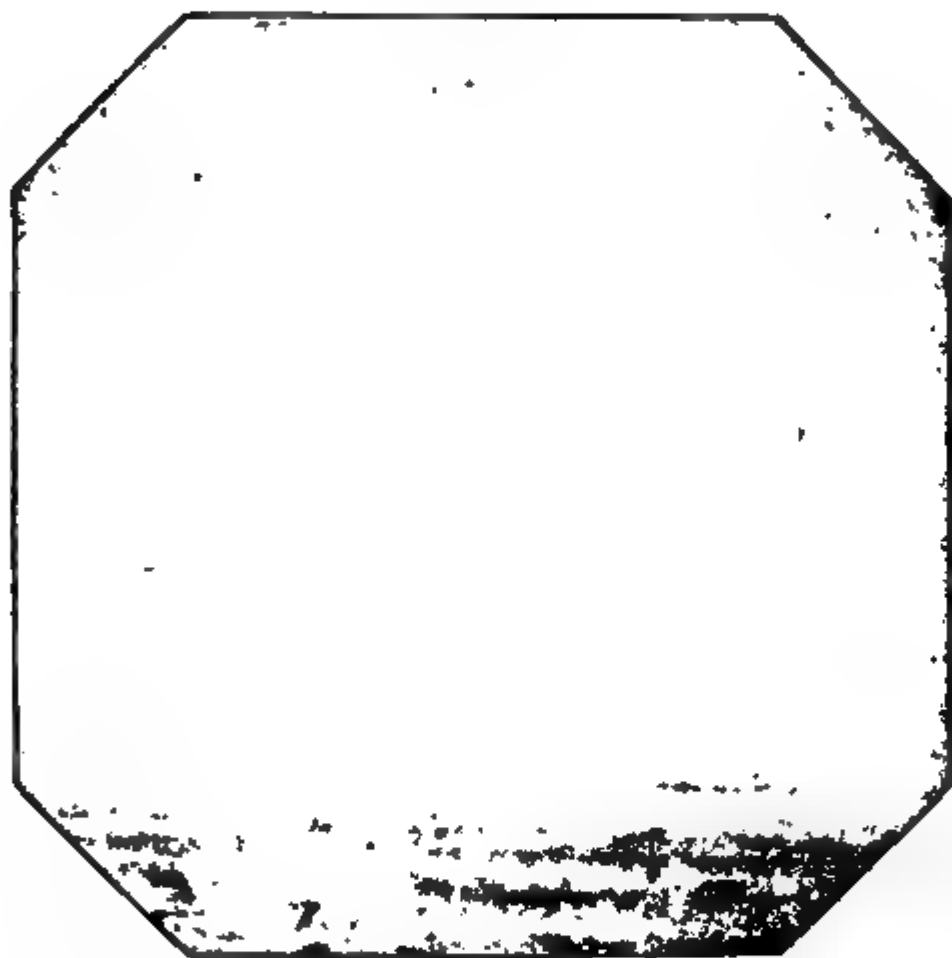


Fig. 1.

DR. RISIEN RUSSELL ON "THE CEREBELLUM."

Plate II.

Fig. 2.

curve is seen to be made up of initial clonic contractions, followed by a long period of tonic contraction, which in its turn gives way to a few terminal clonic jerks (see Fig 2).

You will readily observe from the tracing I next show that the most remarkable alteration is brought about in regard to the behaviour of the muscles of the two fore limbs when one lateral half of the cerebellum has been removed. Instead of the curves as obtained from the two sides being similar they are markedly dissimilar, and indicate that the convulsions in the muscles of the limb on the side of the cerebellar lesion are much in excess of those of the opposite side, and that there is not only this excess in regard to the convulsions on the side of the lesion, but an actual diminution in the convulsions on the opposite side, as evidenced by the records obtained from the extensor muscles of the fore limb (see Fig. 3). But it requires no specially careful scrutiny of the tracings to convince you of another striking change from the normal, that has been brought about by the ablation of the half of the cerebellum ; clonic spasm now completely replaces the tonus observed at a certain stage of the convulsions in the normal animal, in so far as the convulsions on the side of the cerebellar lesion are concerned. There is thus an exaggeration of the amount of muscular contraction in the fore limb on the side of the cerebellar lesion, in addition to which the tonic stage of the normal convulsions has been completely obliterated by clonus of the most exaggerated character.

This result, though striking, does not absolutely prove that the excitability of the cortex of the cerebral hemisphere of the opposite side to that from which the half of the cerebellum has been removed is increased, therefore it became necessary to test the excitability of the cortex on the two sides by means of the faradic current. By this means it was found that whereas normally a current of about the same strength is required to evoke contraction in the muscles of the two sides of the body, according as one or the other cerebral hemisphere is stimulated, after ablation of one lateral half of the cerebellum the strength of current required to evoke a response on excitation of the opposite hemisphere is considerably less than that required to evoke a response from the cortex of the cerebral hemisphere on

the same side as the cerebellar ablation. Moreover, it was found that this difference in the excitability of the two cerebral hemispheres is due largely, at any rate, to an increase in the excitability of the cortex of the hemisphere opposite to the side of the cerebellar lesion. And in so far as this increased excitability is evidenced by the amount of resulting muscular contraction you will remember that such evidence is to be looked for in the behaviour of the muscles of the limb on the side of the cerebral lesion, in that the relation of a cerebral hemisphere to the muscles of the limbs is a crossed one, the right cerebral hemisphere, for instance, being concerned chiefly with the movements of the left limbs. This being so then, the removal of the left half of the cerebellum induces a state of increased excitability of the cortex of the right cerebral hemisphere; this increased excitability is manifested by the mode of behaviour of the muscles of the left limbs—that is, those on the side of the cerebellar lesion.

It would thus seem that normally the one half of the cerebellum exerts an inhibiting or controlling influence on the neurons of the cortex of the opposite cerebral hemisphere, and that with ablation of the half of the cerebellum this influence is removed, and increased excitability of the opposite cerebral cortex results.

If we next turn our attention to the consideration as to whether there is any way by which such influences can reach the cortex of the opposite cerebral hemisphere from one half of the cerebellum we find that there is such a path by way of the superior cerebellar peduncle. After ablation of one half of the cerebellum the fibres of the superior cerebellar peduncle on the same side degenerate, and these degenerated fibres when traced brainwards are found to decussate, and some of them are found to terminate in the region of the opposite red nucleus, while the remainder terminate in the opposite optic thalamus; no such degenerated fibres having been traced to the cortex of the opposite cerebral hemisphere. While there is thus no direct path to the opposite cerebral cortex, there is an indirect one through the optic thalamus.

There thus appears to be evidence that ablation of one

DR. RISIEN RUSSELL ON "THE CEREBELLUM."

Plate III.

Fig. 3.

DR. RISIEN RUSSELL ON "THE CEREBELLUM."

Plate IV.

Fig. 4.

half of the cerebellum abolishes some inhibiting influence which is normally exerted by the cerebellum on the cerebrum, and that the path by which such impulses may travel is the superior cerebellar peduncle; but another possibility has yet to be considered and negatived before we are in a position to conclude that the explanation that has been offered, and which seems most probable, is in reality the correct one. The possibility to which I refer is that the phenomena observed after ablation of the half of the cerebellum, both on electrical excitation of the cerebral cortex and on the administration of absinthe, may in reality indicate that some inhibiting influence normally exerted by the cerebellum on the neurons of the anterior horns of the spinal cord, has been removed and thus allows of the excessive discharge during the absinthe convulsions and the increased response on electrical excitation of the cerebral cortex.

This possibility is, however, negatived by the results obtained on section of the inferior cerebellar peduncle, including the so-called sensory tract of Edinger—the most probable path by which any inhibiting influence from the cerebellum can be expected to reach the anterior horn cells of the spinal cord.

If the phenomena are to be accounted for by the removal of an inhibiting influence exerted on the anterior horn-cells, section of the inferior peduncle of the cerebellum ought to be attended by similar phenomena to those observed on ablation of the half of the cerebellum, instead of which a totally different state of things obtains under such circumstances. On evoking convulsions by absinthe after section of the inferior peduncle, instead of the muscles of the fore limb on the side of the lesion responding to a greater degree than those of the opposite fore limb, there is a total absence of any contraction of the muscles of this limb (see Fig. 4). We have, therefore, this striking result that not only is there not an excess of convulsions in the muscles of the fore limb on the side of the lesion, but that there is actually a total exclusion of all convulsions from the muscles of this limb.

This must suffice as regards questions of chiefly physiological interest, and in the time that remains at my disposal

I propose to call your attention to those points which concern us more nearly in our clinical work, as physicians and surgeons, in one of the most difficult clinical problems with which we may at any time be confronted:—viz., the localisation of the seat of a lesion in the cerebellum.

As in the case of the question of more purely physiological interest, so here time will allow of my dealing only with the phenomena consequent on ablation of one lateral half of the cerebellum. I choose this rather than any other aspect of the question, in that the problem we have most frequently to solve clinically, in regard both to abscess and tumour of the cerebellum, is which side of the organ is affected.

The *attitude* is a very striking one, both as seen in animals after ablation of half of the cerebellum and as may be seen in man with a unilateral lesion of the organ. The head is inclined to the side of the lesion so that the ear and shoulder are approximated to each other, added to which there is arching of the spinal column laterally with the concavity of the curve to the side of the lesion. In man the head may furthermore be rotated on its vertical axis so that the chin points to the healthy side, that is away from the side of the cerebellar lesion. Characteristic as is this attitude, and valuable as it may prove to be in our attempts at cerebellar localisation, it is robbed of no small amount of its value owing to the fact that in certain cases of cerebral tumour the same attitude has been present. In some of these it is possible that the explanation of its occurrence is to be found in the fact that there has been more or less direct pressure on the superior cerebellar peduncle, but in other instances the growth has been too far removed from this structure to allow of this explanation being regarded as at all likely to be the correct one.

Rotation of the subject about its longitudinal axis is a phenomenon sometimes observed after ablation of half of the cerebellum, but it is very rarely met with as a result of cerebellar disease in man. The direction of rotation is best described in terms relating to a screw, in that endless confusion arises when we attempt to describe it in any other way, notably as from right to left or left to right. A very little consideration will be sufficient to make it obvious

to you that unless specifically stated to which they refer, there must be a doubt as to whether right and left are used in regard to the observer or observed, a distinction that is important in that what is right to left if the terms relate to the observer, is left to right if the terms relate to the observed, unless the observed and observer be supposed to be both facing in the same direction. Similar and other difficulties arise when we attempt to describe the direction of rotation in other ways, including the mode which finds most favour with physicists:—viz., clockwise and anti-clockwise. Time will not, however, allow me to enter into greater detail with regard to this matter; I must content myself with briefly pointing out to you how rotation in cerebellar affections is to be described in relation to a screw. The animal or man is supposed to represent the screw, in either case the head of the subject corresponding to the head of the screw, moreover the screw is supposed to be that in ordinary use in this country—viz., a right-handed, male screw. With this conception before us all that is needed in describing rotation in regard to lesions of the cerebellum is to say that with a right-sided lesion the subject rotates like a screw entering an object, while with a left-sided lesion the mode of rotation is like a screw coming out of an object.

General titubation and *reeling* are constant among the phenomena which result after ablation of half of the cerebellum, and both symptoms are of course commonly met with in affections of the cerebellum in man. The reeling after experimental lesions is, according to my observations, in a direction away from the side of the lesion, so that the animal tends to fall towards the healthy side. Some confusion may, however, arise in this connection in that the animal may sometimes be observed to fall over on to the side of the cerebellar lesion, a state of things depending, as we shall presently see, on motor paresis and inco-ordination of the limbs on the side of the lesion, which fail to support the animal and thus allow of its falling to this side. This is a totally distinct phenomenon from the reeling due to disturbance of equilibration, in which the animal pitches, as I have already said, away from the side of the lesion—i.e., towards the healthy side. Few, if any, of the symptoms

which result from cerebellar lesions in man are less reliable in any attempts at localisation of the side of the cerebellum affected than is the direction of reeling, for sometimes it is away from the side affected, while at other times it is towards that side. So uncertain is this sign that I am in the habit of disregarding it when attempting to determine which side of the cerebellum is affected in any given case, unless the direction of reeling agrees with the other signs present in indicating the probable seat of lesion. In other words, where the other signs present point to the one side of the cerebellum as being affected, while the reeling suggests that it is the opposite side of the organ in which the defect exists, I rely on the other signs for localisation, and disregard the evidence supplied by the direction of reeling.

Closely related to these disorders of equilibration that we have just been considering is the oscillation of the eyes so constantly seen after experimental lesions of the cerebellum, and which is also commonly met with in disease of the organ in man. The nystagmus which occurs in unilateral lesions of the cerebellum is lateral, and is most marked when a voluntary attempt is made to turn the eyes to the side of the lesion.

After experimental lesions another phenomenon met with which is associated with nystagmus is ocular displacement: a turning of the eyes away from the side of the lesion. According to Luciani both globes participate in this displacement, so that there is conjugate turning of both eyes to the healthy side. I have not, myself, noticed much departure from its normal position of the eye on the side of the cerebellar lesion, but the opposite eye is always displaced markedly downwards and outwards—*i.e.*, away from the side of the lesion. It is rare to meet with this displacement of the globes as a result of cerebellar disease in man, but it was present in a case of abscess of the cerebellum, recorded by Dr. Acland and Mr. Ballance, and which through their courtesy I was able to see, and I have also seen this displacement of the eyes after the operation for removal of a cerebellar tumour on one side. It is not surprising that this abnormal position of the eyes is not more commonly met with, in that even after experimental ablation of half of

the cerebellum the eyes return to their normal positions within a comparatively short time after the operation. If compensation can thus rapidly come about after an acute lesion, it is only natural to suppose that it may go on *pari passu* with the more slowly produced lesions in man, so that the defect may never be noted. It is only in connection with the more acute lesions in man that it would be reasonable to expect to meet with any such displacement of the eyes.

In connection with this part of my subject it is necessary for me to warn you that in man, notably in cases where the lesion of the cerebellum is a tumour, abnormal positions of the eyes may be met with either as a result of pressure on the nerves supplying the ocular muscles, or as a result of secondary infiltration of the pons by a growth originating in the cerebellum. Of the nerves concerned with ocular movements you are aware that the sixth, in consequence of its slender size and long intra-cranial course, is the most liable to suffer from the results of increase of intra-cranial pressure. It is, accordingly, not uncommon to meet with paralysis or paresis of one or other external rectus, and note, further, that it does not at all necessarily follow that it is the external rectus on the side of the cerebellar tumour that suffers first, for, in some instances, it is the opposite external rectus that manifests signs of weakness. The importance of paying due attention to this point will become more obvious when I next tell you that it occasionally happens that weakness of the internal rectus on the side of the cerebellar lesion is present with displacement of the eye on this side outwards. I mention this as a clinical fact which I have myself observed, and which I have seen noted in a few published records of cerebellar tumours; but I cannot pretend to offer any satisfactory explanation of the reason why this muscle, alone of all those supplied by the third nerve, should show the defect mentioned. Now the point of real importance with regard to this observation is that a knowledge of the possibility of the occurrence may prevent our falling into error as regards the localisation of a tumour in one or other side of the cerebellum. For it is conceivable that with weakness of the internal rectus on the side of the lesion and consequent displacement of

the eye outwards, there may also be evidence of weakness of the opposite external rectus with turning of that eye inwards, so that both eyes turn towards the side of the lesion. But it has already been said that as a result of the cerebellar defect alone the eyes may turn away from the side of the lesion, so that without a knowledge that a similar displacement may be otherwise brought about having a totally different significance we may be led to localise the tumour in the wrong side of the cerebellum, if we rely too much on the ocular displacement. Where the ocular displacement is directly due to the cerebellar lesion the eyes turn away from the side of the lesion, while when the displacement is secondarily induced in the way just indicated, the eyes turn towards the side of the lesion.

Time will not allow me to do more than offer a further word of warning that due regard should be paid to the possibility that turning of the eyes to one side may be the result of secondary involvement of the sixth nucleus, as a result of extension of the growth from the cerebellum to the pons, and that, therefore, a careful search should be made for any other evidence that may be present which may be regarded as pointing to such secondary extension of the neoplasm to the pons, before we regard the ocular displacement as the direct result of a defect of the cerebellum.

Before leaving this part of my subject I wish to say that I regard the displacement of the eyes after ablation of parts of the cerebellum as a truly paralytic and not an irritative defect, and that one of the most cogent reasons for so regarding the condition is that after the displacement has been recovered from it may be reproduced by placing the animal under the anæsthetic influence of ether, for then, at a stage which immediately precedes that in which the eyes diverge in deep coma, the displacement at first observed after ablation of half the cerebellum is again seen. The anæsthetic may thus be regarded as drowning the centres for eye movements on both sides; but the side on which there are fewest centres for such movements remaining give out first, and thus the unrestrained influence of the opposite centres bring about the displacement of the globes.

When speaking of reeling I said that titubation and

inco-ordination are among the constant phenomena met with in connection with cerebellar lesions; it now remains for me to point out that this inco-ordination is more marked in the limbs on the side of the lesion, and, indeed, that it may in some cases be more or less limited to them. But what I wish more especially to insist on is that this is only one factor in regard to the defect of movement met with in the limbs under such circumstances, and that in reality there is in addition a true *motor paresis* of the limbs on the side of the lesion. This phenomenon is only rarely met with in man, owing no doubt to compensation going on hand in hand with the slowly produced defects of disease. It is noteworthy that when this defect has been met with in man it is the superior extremity that appears to suffer in greatest degree, while in animals the posterior extremity on the side of the lesion is that which is most defective. In both instances, however, it is the limbs on the same side as the lesion that are affected, and not those on the opposite side, as obtains in the case of a lesion of one cerebral hemisphere.

Now in the case of hemiplegia of cerebral origin we have abundant evidence that the path by which impulses reach the opposite side of the spinal cord is the pyramidal tract, and, moreover, these fibres degenerate after a lesion of the motor centres or one which interrupts the motor conducting fibres at any part of their course, and such degenerated fibres can be traced throughout the spinal cord. Have we any similar evidence in regard to a path by which impulses can pass from the cerebellum in an efferent direction so as to reach the anterior horn-cells of the spinal cord? According to Marchi, and certain other observers, there is such a tract, the fibres of which are situated at the margin of the antero-lateral region of the spinal cord, and, moreover, according to them, this tract of the fibres degenerates after a lesion of the cerebellum just as do the pyramidal fibres after a cerebral lesion, the only difference being that in the case of the cerebellum the tract degenerates in the spinal cord on the same side as the lesion, and does not cross over to the opposite side as in the case of the majority of the fibres of the pyramidal tract.

My own observations do not confirm those of Marchi, however, for like Ferrier and Turner I find no evidence that any tract degenerates in the spinal cord after a lesion limited to the cerebellum. Fibres in the inferior peduncle on the same side degenerate after ablation of one half of the cerebellum, and subsequently occupy the periphery of the lateral region of the medulla on the same side, but none of these reach the spinal cord. There is, however, a tract of fibres at the periphery of the ventrolateral region of the cord, and it degenerates in an efferent direction, but its fibres are derived from Deiters' nucleus, and they degenerate after a lesion of that nucleus. If I next remind you that Deiters' nucleus is connected with the cerebellum by means of the so-called sensory tract of Edinger, which is in reality composed of efferent fibres from the cerebellum, you will readily recognise that though according to my own observations there is no direct path from the cerebellum to the spinal cord, there is, nevertheless, an indirect one through Deiters' nucleus, which is as it were the half-way station.

Rigidity due to spasm of the muscles of the limbs on the side of the lesion, and to some extent of those of the opposite posterior extremity, is a constant feature after experimental ablation of one half of the cerebellum, and the back muscles share in this spasm. I do not, however, remember ever having seen any very definite evidence of such rigidity in an uncomplicated cerebellar lesion in man. The influence exerted by the cerebellum on the muscles in regard to tonus is a very complicated one, for Professor Victor Horsley and Dr. Max Lowenthal have shown, among other points of great interest, that when extensor tonus of the limbs is obtained by removal of both cerebral hemispheres, faradic excitation of the upper surface of the cerebellum, at the junction of the vermis and lateral lobe, results in immediate relaxation of the tonus, which, however, becomes re-established as soon as the current is shut off, and that this effect is most marked in the limbs on the side of the cerebellum that is stimulated.

Tendon Jerks.—After ablation of half of the cerebellum both knee-jerks are increased, but that on the side of the lesion is the more exaggerated and remains so long after

that of the opposite side has become normal. A similar state of things is met with in some instances in man; in others, however, no difference can be made out in regard to the activity of the knee-jerks on the two sides, while in others both knee-jerks are abolished. This last phenomenon was at one time regarded as of considerable diagnostic value, as indicating that the cerebellum was the probable seat of the tumour when the phenomenon was met with in a case in which there was doubt as regards localisation. We, however, now know that absent knee-jerks in intra-cranial tumours have not this significance, but that it may be impossible to obtain the knee-jerks when there is great increase of intra-cranial pressure, as in a large tumour of a cerebral hemisphere, or where pressure is quickly increased, as in a rapidly growing tumour of the cerebrum.

Anæsthesia is met with after experimental lesions, and corresponds in its distribution to that of the motor paresis, so that the limbs on the side of the cerebellar ablation are those chiefly affected; but as far as I am aware defect of sensibility has never been met with as the result of an uncomplicated cerebellar lesion in man.

So much then, gentlemen, for the information which we derive from experimental physiology in regard to the problems connected with cerebellar localisation. Does clinical medicine afford us any information on the subject which is not supplied by the results of experiments? There are two symptoms which, if present, are of the greatest possible value in determining the probable side of the cerebellum in which a tumour is situated, they are *facial paralysis*, of peripheral type, and *deafness*; both are on the same side as the tumour. Moreover, as pointed out by Dr. Beevor in a recent discussion on the localisation of intra-cranial tumours, at the Neurological Society, these signs further indicate that the tumour of the cerebellum is situated in the anterior part of the posterior fossa as opposed to its being in the so-called cerebellar fossa.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON DISEASES OF CHILDREN.

1. *The Diseases of Children.* By JAMES FREDERIC GOODHART, M.D., F.R.C.P.; Consulting Physician to the Evelina Hospital for Sick Children; with the assistance of GEORGE FREDERIC STILL, M.A., M.D., M.R.C.P.; Medical Registrar and Pathologist to the Hospital for Sick Children, Great Ormond-street. Sixth edition. London: J. & A. Churchill. 1899. Pp. 720.
2. *An American Text-book of the Diseases of Children.* By American Teachers. Edited by LOUIS STARR, M.D., and T. S. WESTCOTT, M.D. Second edition. Revised. London: The Rebman Publishing Company. 1898. Two Vols. Pp. 1204.
3. *Transactions of the American Orthopædic Association.* Vol. XI. Illustrated. Philadelphia. 1898. Pp. 461.
4. *Growing Children, their Clothes and Deformity.* By E. NOBLE SMITH, F.R.C.S. London: Smith, Elder & Co. 1899. Pp. 23.
5. *Pediatrics.* Vol. VI. Nos. 5-12. New York and London. 1898.
6. *Archives of Pediatrics.* Vol. XV. 9-12, and Vol. XVI. 2-3. New York. 1898-9.

1. It is with feelings of deep satisfaction that we notice the appearance of this book for the sixth time. We have been looking forward to its publication for some months. In its new garb it is much improved in appearance and much pleasanter to handle. It is larger in every way. Dr. Goodhart is to be congratulated on its successful issue, and most of all for having associated with him so highly distinguished and able a scholar as Dr. Still. We acquiesce

in Dr. Goodhart's expression on this point in his preface, and, after carefully going over the work, notice many most valuable paragraphs and observations, evidently from the pen of Dr. Still, with whose conscientious labours in the wards of Great Ormond-street we have the privilege of being familiar. Dr. Still's assistance increases materially the value of the work, and his views are tactfully dovetailed in with those of his senior and distinguished fellow-author.

Every chapter bears the stamp of revision: some few paragraphs expunged and much fresh information added. A few fresh points must be noticed. It is pointed out, in alluding to treatment, that the children of the upper classes are much more sensitive to medication than hospital patients, and one should begin with small doses. In children above the age of infancy champagne is considered to be the most suitable of alcoholic stimulants, if such indeed are required. Bleeding and leeches are rightly given a prominent place in severe lung and heart disease.

The warnings about poultices are repeated, and the authors discard them as much as possible.

The anterior fontanelle is dated to close usually about the 18th month, and the care of premature infants is described. In chap. III. there is a clinical picture of great value on "Chronic Dilatation of the Colon," not before described. The paragraphs on "Recurrent Vomiting," "Membranous Gastritis," "Congenital Hypertrophy of the Pylorus," "Geographical Tongue," "Diphtheritic Paralysis and Anti-toxin," "Erysipelas," "Bronchiectasis," "Bronchopneumonia," "Scrofula," "Tubercular Peritonitis," "Disease of the Spleen," "Meningitis," "Posterior Basic Meningitis," "Habit Spasm," "Idiocy and Cretinism," "Idioglossia, and Speech Defects," "Malignant Endocarditis," "Purpura Fulminans," "Achondroplasia," "Enema Rashes," "Œdema," "Ichthyosis," and "The Care of Children with Infantile Paralysis" are all either quite new or rewritten; thus it is obvious the work is much enlarged.

A work like this, gone over separately by each of these authors, and gone over, as we are told, by both together, cannot be other than one of our most valuable books on diseases of children. This we believe it to be, and if asked

to recommend the most convenient, sound, and practical book on this subject, we should have no hesitation in naming this volume. It is, moreover, written in beautiful English, which has always characterised Dr. Goodhart's work. In any such book some imperfections are sure to be found by the critic, and while impressed with the excellence of the book we are not blind to the fact that one or two points might perhaps be revised in future editions. They are, however, very difficult to find, and are of the most trivial nature. For instance, we should wish our distinguished authors to be more emphatic in their denunciation of tubes attached to feeding apparatus, while perhaps a little more detailed description might be given of the pathology of "atrophy" or "marasmus," and of "rheumatoid arthritis."

We wish this volume every good fortune, and feel sure that anyone wishing for a safe and beautifully-written book on diseases of children could not possibly do better than trust themselves to the guidance of Drs. Goodhart and Still. They will not go wrong if they do, and they will never regret the purchase.

2. These are beautiful volumes, and reflect great credit on the editor, publisher, and authors. The volumes are brought up to the chief ideas of present-day medicine amongst children, especially in the United States, where the study is eagerly pursued. It seems to have been carefully revised, and much new material is added. It is particularly good on the feeding and general care of children, like all American books on diseases of children, and much valuable information may be found in these chapters. The system is in some cases a good one of getting separate writers for separate articles, and they are, on the whole, fairly complete essays on each subject.

There are, however, some striking omissions in a few of the chapters, and we venture just to mention one or two of these, which we hope will be rectified in future editions.

In the chapter on "Marasmus," or "Simple Atrophy" as it is termed, no true pathology is mentioned. The real essence of the disease, as lucidly described by Dr. Soltau Fenwick

and Baginsky, is not touched upon, and the reader is left with a hazy notion of the actual processes underlying this affection. Again, "rheumatoid arthritis" is not successfully dealt with. It is a rare disease, to be sure, but very familiar to English authorities on diseases of children, and may be seen in the London children's hospitals with its great peculiarities. Then "posterior basal meningitis of infants" is not satisfactorily dealt with, and is confounded with suppurative meningitis. Drs. Gee, Barlow, and Still have done such excellent work on this disease in London that now all books on children's diseases should contain an account of it.

Another peculiar disease of children, rarely seen, but yet most interesting, is "idioglossia." It would, however, be difficult for an author to describe this affection (or, indeed, any disease) without having studied examples of it, and perhaps they have not been yet observed in America. No mention is made of it.

We would like to have seen Vol. II. commence with Diseases of the Nervous System, so as to avoid placing the first short chapter of this branch at the end of Vol. I.

Notwithstanding the above few deficiencies we have the highest admiration for this fine work, and have no hesitation in saying that it reflects credit and honour on the American physicians who have compiled it for their careful study of the diseases of children.

It is beautifully printed and illustrated.

3. These Transactions continue well bound, well printed, and well illustrated. This volume is much enlarged. Amongst the most interesting papers are the following:—

(1.) "On The Arch of the Foot in Infancy and Childhood," by John Dane, M.D., Boston, where it is nicely shown that, instead of young infants having flat feet as some have taught, the space that in the adult and older child is bridged over by the arch of the foot is in the infant and young child, if it is at all fleshy, entirely filled up by a pad of fat; it is the impression made upon the paper by this fat that has misled us into thinking that the foot of the infant had no arch. In thin children the pad is wanting,

in which case the print of the foot strongly resembles that of the adult.

(2.) "Epidemic Infantile Paralysis," by E. G. Brackett, M.D., of Boston. Ten cases are reported, occurring in the same locality at the same time.

(3.) "Bed Posture as an Etiological Factor in Spinal Curvature," by G. W. Fitz, M.D., Cambridge. Here is a most thoughtful and excellent fragment well dealt with. It is shown that lateral bed posture curves the spine; that these habitual postures tend to fix such curve; that the time in bed is long enough to markedly produce it; and that bed posture becomes an important factor in both causation and cure. The spine dips into a curve when lying down.

(4.) "Deformities of the Chest in Rickets," by J. S. Stone, M.D., Boston.

(5.) "Round Shoulders," by Robert Lovett, M.D., Boston.

(6.) "On the Treatment of the Kyphosis in Pott's Disease," by P. Redard, M.D., Paris. A remarkable paper, beautifully illustrated.

The above papers are most instructive.

4. The advice given in this small leaflet is good. It is issued for the public, or perhaps professional readers also. The points Mr. Noble Smith draws attention to may be summarised as follows:—That many deformities develop during growth; that "postural deformities" often result from badly-shaped clothes; that children's clothes should have—(a) large, loose, and full chests; (b) no suspenders or braces; (c) no buttons on stays; (d) belts round the waist to suspend the nether garments from; (e) vests and drawers made separately, as "combinations" are apt to shrink and to cramp the wearer. Boots should have flat heels, long soles, and straight inner borders.

We agree with Mr. Smith in his views, and the above are the salient points of the paper.

5. We cannot conceal the fact that whenever we receive this paper we are disappointed with its printing, paper,

and binding. The two former have improved of late, but the appearance of the cover is most unattractive, and we venture to predict that if the outside and the table of contents were made more clear, and advertisements placed second, it would become far more popular.

6. This is the nicest journal on children's diseases with which we are acquainted. The papers we would draw attention to in these numbers are:—"The Urine of Infants and Children," in No. 9; "Hospitals for Infants," in No. 11; "Whooping-cough," in Vols. XV. 11, and XVI. 3; "Pneumonia," in XV. 12 and XVI. 2; also "Hæmorrhagic Disease" and "Tetany," in XVI. 3.

There is a marked difference between English and American printing; on looking into the type, we notice it lies in the wide spacing between the letters of an American word, as compared with the closely fitted letters of an English printed word. This makes the American type very trying to the eyes of English readers, and accounts for its unpopularity. We feel it trying ourselves; but, on the other hand, we are not blind to the fact that for all we know our type tries the sight of our brethren across the water. We would be glad to hear some expression of opinion on this point.

Atlas of External Diseases of the Eye. By A. MAITLAND RAMSAY, M.D., with 30 full Coloured Plates, and 18 full-page Photogravures. Folio. Pp. 195. Glasgow: James MacLehose & Sons. 1898.

THE plates in this Atlas are, for the most part, executed from photographs of actual cases, most of which occurred in connection with the author's work in the Glasgow Infirmary, and the author hopes that they may be found useful to medical men in general practice who may not have many opportunities of visiting the wards and clinique of an ophthalmic institution.

He has endeavoured to make the letterpress which accompanies each illustration not only descriptive of, but also complementary to the plate, so as to give as faithful a clinical picture as possible of all the diseases dealt with.

To make a really satisfactory atlas of external diseases of the eye is one of the most difficult tasks imaginable, for each picture represents only one stage of a disease which varies in appearance daily, often hourly; but the author of this Atlas has done better in this respect than most of his predecessors, and has added sufficient description of the disease to explain and supplement the illustration, so that a fairly comprehensive picture can be formed by the reader of the condition in general.

The photographs are, for the most part, fairly characteristic and well chosen, and the coloured plates are better, and more nearly approach the real appearances, than in any other atlas of the kind which we have come across, though perfection has not yet been reached, and many obvious improvements could be made. The book is beautifully printed, and fills a real want long felt, for though many an excellent atlas of internal diseases of the eye exists, few have successfully produced an atlas of the external diseases of the lids and eyeball.

We therefore congratulate Dr. Maitland Ramsay, though we think in some of his cases he might have had the picture taken at a stage more characteristic of the disease than he has chosen. For instance, those pictures which illustrate the difference between a "Hordeolum" and a "Chalazion," or between "Blepharitis Marginalis" and "Lachrymal Catarrh," on Plate 2, might easily be improved. The book is an expensive one—viz., £3 3s. net.

The Essentials of Chemical Physiology for the Use of Students. By W. D. HALLIBURTON, M.D., F.R.S. Third Edition. Longmans, Green & Co. 1899. Pp. 199.

THIS most useful work is now so well known, and its merits are so universally recognised, that little more is necessary than to call the attention of our readers to the appearance of a new edition. The present issue, however, differs in many respects from those which have preceded it, as was required by the rapid progress of the science of physiological chemistry. Some new sections have been added, notably those on the urinary

pigments, our knowledge of which has become so much more precise of late years, owing to the labours of Hopkins, Garrod, and others, and on the crystallisation of egg albumin as effected by the method of Hopkins. The chapter on the proteids has been rewritten, and includes a new section on the protamins, and an extended account of the nucleins, while in most of the chapters considerable changes will be found. In the section on the coagulation of the blood a table is given representing the process of clotting as due to the action of thrombin on fibrinogen; thrombin, the perfect fibrin ferment, being itself formed from a zymogen, prothrombin, by the action of the lime salts. The principal changes in the text are naturally to be found in the advanced course. Here we have a coloured plate of the different ozone crystals, a description and figures of the ultra violet spectrum of hæmoglobin, and some of its derivatives, and in the appendix is given a description of Oliver's methods of estimating the colouring matter of the blood, and of determining the number of corpuscles. It will be seen that the work is brought well up to date. As a student's book it has no equal. It is an essential part of the equipment of every physiological laboratory.

Handbook of Physiology. By W. D. HALLIBURTON, M.D., F.R.S. Fifteenth Edition. London: John Murray. 1899. Pp. 872.

A BOOK which appears in the fifteenth edition may be considered to have passed the stage of criticism, and there are very few members of the medical profession who have not to acknowledge the benefit they have derived at some stage of their studies from one or other of the numerous editions of Kirkes' *Physiology*. This most admirable textbook has evidently entered on a new era of popularity, thanks to the labours of Professor Halliburton. The book still has the name of "Kirkes' Handbook" on the title page, but none of the old Kirkes remains—the work has been completely rewritten by its present author. The first edition of Professor Halliburton's handbook appeared only two and a half years ago, but even in such a short

time the marvellous activity of physiological research has made considerable alteration necessary. The author tells us that he has endeavoured to incorporate all the important facts that have been discovered since 1896, and in this endeavour he appears to have been very successful. The size of the book is, however, increased by only 21 pages. In revising the chapter on the circulation of the blood Professor Halliburton has had the assistance of Dr. Leonard Hill. A very important alteration is made in the arrangement of the matter. In the last edition the central nervous system and the organs of special sense were treated of before circulation, respiration, digestion, and the other vegetative functions. This unusual and undesirable arrangement is now altered, and the brain and cord, with the senses, are placed at the end. The illustrations have always been a great feature in Kirkes, and as the text includes a good deal of histology there is much room for pictorial effort. In the present edition there are 668 figures in the text, many of them printed in colours and all beautifully executed. There is, besides, a good coloured plate of the principal blood spectra. On the whole we can most strongly recommend this handbook as containing within moderate compass a very complete and accurate account of the present condition of physiological science. It is a work which well deserves the great success which it has enjoyed, and which we hope will long attend it.

Elementary Physiology. By BENJAMIN MOORE, M.A. London: Longmans, Green & Co. 1899. Pp. 295.

IN the preface we are told that "this book is intended to give an idea of the structure of the body, and of the changes which are continually taking place in it during life, to those who have no previous knowledge of the subject." It is written in as elementary a fashion as possible, and with the smallest possible use of technical terms. It is meant for the use of junior students as a first introduction to the subject, and also for general readers, and it is hoped "that it may remove some of that deplorable ignorance

which is so often met with, even among fairly well educated people, as to the general structure of their own bodies, and the actions which take place within them during life." The usefulness of the work is greatly increased by an appendix of practical exercises well selected, and easy of performance, and also a list of questions by which the reader can easily test his knowledge as he goes along.

The arrangement of the matter is simple, and presents nothing unusual. After a general introduction, an anatomical description of the body is given in three chapters—on the skeleton and its articulations, the muscular system, and the position of the viscera. We have then chapters on the circulatory system, the blood, diet, digestion, absorption and metabolism, respiration, animal heat, excretion, the nervous system, and the senses.

As was to be expected from a physiologist and teacher of Professor Moore's eminence, the information in each of these chapters is exact and clearly given, and throughout great judgment is shown in separating the essential matters from those which are of less importance. A student who reads this little work intelligently, and who works over the practical exercises, and tests himself with the questions in the appendix, will know far more physiology than nine-tenths of the men presenting themselves for examination do—at least so far as our experience enables us to judge.

We notice a few errors in the text, evidently due to the printer. Thus, in the note on p. 216, it is stated that 9 grams of creatinin, 5 grams of uric acid, and 4 grams of hippuric acid are excreted daily. These numbers should, of course, be 0·9, 0·5, and 0·4 respectively. Such slips are, however, very few.

The text is illustrated by 125 drawings, mostly taken from "Quain's Anatomy," and Schäfer's "Essentials of Histology." There is a good index.

This book, which is the same in plan as Foster and Shore's "Physiology for Beginners," but somewhat more comprehensive, will, we think, supply a want which is largely felt. We feel sure that it will enjoy that wide popularity which it so well deserves.

Schoolboys' Special Immorality. By MAURICE C. HIME, M.A., LL.D., sometime Headmaster of Foyle College, Londonderry. London: J. & A. Churchill. 1899. Pp. 48.

WITH much skill and sound judgment Dr. Maurice Hime deals with a difficult and delicate subject in this booklet of 48 pages. The work is based upon an article written by the author in the autumn of 1897, which was published in the *Lancet* for September 4th of that year. After some introductory observations, Dr. Hime insists on the prevalence of the vice and defines the duty of headmasters regarding it.

Personally, he has found that certain school arrangements are of use in preventing and checking the vice. These arrangements are mentioned and explained. First and chiefly, cubicles he will have none of.

The advantages of moral persuasion are discussed, and Dr. Hime easily disposes of the objection that plain speaking may do actual harm to an innocent boy. He says (page 30), "good advice, provided that it be given at once, wisely and affectionately, by an experienced and discreet schoolmaster, cannot do harm to any boy, good, bad, or indifferent."

Dr. Hime declares strongly against expulsion of boys reasonably suspected of, or actually detected in, the offence. In his opinion, it is "an absurd, injurious, and most unfair plan." His excellent little homily ends with warm-hearted words of encouragement for boys, masters, and parents alike.

Elements of Alkaloidal Ætiology, introductory to the Study of Auto-Intoxication in Disease. By A. M. BROWN, M.D. London: Henry Kimpton. 1899. Pp. 86.

THIS book is apparently intended to maintain two theses. First, that most, if not all, diseases are due to auto-intoxication by alkaloidal substances generated in the body by its metabolism; and, secondly, that the generally received views as to the important part played by bacteria in the causation of disease are erroneous and even ridiculous. The work appears to be entirely the outcome of the study, as the author does not record any observations of his own in support of either of his contentions. We cannot congratulate him either on the matter or the manner

of his work, either on the value he gives to the statements on which he relies, or on the tone in which he speaks of the works of those men who are admitted by all pathologists to have done most for modern science. Thus, Bouchard's observations on the toxicity of the urine and on the antagonism of day and night urine, which have been disproved by every competent experimenter who has controlled them, are quoted as if they were fully established, while such a sentence as the following shows a wilful ignorance of facts:—"We must insist that the phenomena of disease, due to the most essential processes, are possible without the intervention of micro-organisms, bacillar or otherwise." We would ask what disease? Has the author ever demonstrated the absence of the tubercle bacillus in phthisis, of the typhoid bacillus in typhoid, or the tetanus bacillus in tetanus? But perhaps it is idle to speak to a generation which has read three editions of Dr. Brown's larger work on alkaloidal ætiology. For our part the smaller introductory work is enough for us, although, as our readers may remember, we have noticed the first and second editions of the *opus magnum*.

In conclusion we would quote the following passage from the work before us:—"The speculative groping of pangermists in general may have added some brilliant pages to the romance of medicine, but very little to our knowledge of disease, and still less to its alleviation or cure." Those who agree with this statement, and with the view that no advance in our knowledge of pathology, "more particularly pathogenesis," has been made in the last thirty years, may find Dr. Brown's book agreeable reading. To those who think otherwise we cannot recommend it.

The Hygiene of the Mouth; a Guide to the Prevention and Control of Dental Diseases. By R. DENISON PEDLEY, F.R.C.S. Ed., L.D.S. Eng. London: J. P. Segg & Co.

THE prevalence of dental disease and the ill-consequences to general health therefrom, together with the belief that more care on the part of humanity, in what one might term the

toilet of the mouth, would materially help to mitigate these evils have, states the writer, prompted him to publish the pages before us.

On reading, it would strike one that some doubt exists for whom the author caters—the profession or the public. To the latter we would say read, mark, learn, &c.; but from perusal, the *dentist*, if a medical man, would be unlikely to cull much information, apart from having his energies freshened in the direction of giving advice more assiduously towards the efficient cleansing of their teeth by his patients, especially those of tender years.

The author treats his subject as it applies to—(1) childhood, (2) adult life. Speaking under the former division, the advising young children quill toothpicks to carry about and use (!) would, we believe, be open to much criticism of an adverse nature.

Touching upon the much-debated question, whether sweet-meats should be allowed young children, the more sensible view—now taken by not a few foremost practitioners—has been adopted by the writer, viz., that in moderation, and when of good quality, such are not to be forbidden, seeing the amount of nourishment they contain. That school children be compelled to cleanse their teeth daily *under supervision* is a sound proposition; and could the author in some manner bring about a system of “tooth-brushing drill”—let us call it—to be adopted in all public schools, &c., there is not any doubt but that much suffering—nay, more, disappointment—in after-life would be anticipated.

A tabulation of reflex troubles having a dental origin, with clinical records of some such cases, are next gone into, after which the last forty pages are enriched by some diagrammatic illustrations of various conditions of the human teeth, together with several formulæ for mouth-washes, &c.

That any very striking information awaits the reader—unless a non-professional one—in the ninety pages which go to complete this publication we cannot state, but, undoubtedly, sufferers, or those having children in their care, would derive useful hints from their study. The publishers have done their part well. A curious fact is the omission of all mention as to dates of writing, publishing, &c.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

*The Rinderpest of 1897 in Cape Colony.** By JAMES HARPUR.

In bringing forward this subject I will endeavour to tell as plainly as I can something of the ravages of the great Rinderpest, or cattle plague, which invaded Cape Colony in the early months of 1897, and also something of the exertions put forward in trying to check its fatal progress.

It cannot be regarded as a disease of recent years. The German appellation of Rinderpest, the steppe murrain of Russia, and the cattle plague of England, are now fully recognised as one and the same disease. It seems to have taken up its abode in Russia. Every year in that country it carries off cattle to the value of close on two million pounds sterling.

In this century it appears to have been limited to Russia until 1827, when, in consequence of the invasion of the Turkish dominions by the Russian army, the area of the disease was extended into that country. It afterwards penetrated into Prussia, Saxony, Hungary, and Austria, and committed great ravages in those countries before it could be extirpated.

In 1841 it was introduced into Egypt, and in three years destroyed 350,000 head of cattle—in fact, almost all the cattle then in the country.

It attacked England during the years 1866–67, and the death-rate amongst the cattle was enormous, rising to over 500 a day. It is calculated that over 500,000 head were carried off, besides costing the Government many millions of money.

The evolution of this epidemic in Africa is unique amongst the epidemics of the world as regards the steady course which it pursued, and the amount of destruction and ruin, famine and war, which it left in its trail.

Rinderpest is a specific disease belonging to the class of con-

* Read before the Dublin University Biological Association.

tagious fevers. It is conveyed in the excreta from the deceased animal. How long the virus lasts in the excreta is not known, nor to what distance it may be diffused. In addition, it may travel in the hide, horns, hoofs, and intestines of the dead animal, or in anything that may come in contact with the blood of the animal. The contagious matter is one of the most subtle and prolific of any of the known elements of disease.

Belonging to the class of disease termed zymotic, one would expect to find the period of incubation, then the onset, then the period of high fever, then the period of local effects, and lastly the time when the disease tends of itself to get well, and the patient's fate depends on one point—has the disease made such havoc that the patient has strength to recover from it or not? It must, however, be borne in mind that whilst we speak of the different stages of a zymotic disease, and can always separate them in idea, they may be all crowded together, constituting what may be termed the malignant type. To this special type Rinderpest belongs. The period of incubation is from three to five days, and the animal usually dies from four to six days after the onset. Recovery, when it does occur, is very slow, and takes place by lysis. At the period of onset the first symptom is a marked rise in temperature, rising from 101° F. to 107–8° F. The animal then gets a dull, dispirited look, the eyes lose their brightness, the ears hang in a peculiar fashion. It ceases to ruminate, and leaves off eating. There is a certain amount of stiffness in the movement of the animal. The eyes next become bloodshot, and appear sunken in the head from the œdema of their lids. The inflammation of the eyes soon leads to secretion of what is at first a mucous, then a muco-purulent, discharge, which can be seen running down from the inner canthus, leaving a dirty whitish or greenish streak along the hair of the face. This is a very characteristic sign of the disease. The nasal mucous membrane becomes very vascular, and readily bleeds if roughly handled, as, for instance, in making an animal open its mouth by inserting the fingers into the nose. The mucous membrane of the gums and inner side of the lips, and other parts of the mouth, become excoriated. These excoriations are of various extent and of irregular shape. Another very early symptom of the disease is the congestion of the mucous membrane of the vulva, which becomes reddened, and exhibits abraded spots similar to those observed in the mouth. The appetite suddenly fails, and in milch cows the secretion of milk disappears almost entirely. Purging is another very marked symptom of the disease.

On *post-mortem* examination one finds that the changes produced by the disease affect chiefly the digestive system. The fourth stomach presents a congested lining membrane ranging in tint from a reddish pink to a deep plum colour. The upper part of the small intestine partakes in the congestion of the fourth stomach, presenting the same variety of tints. The mucous membrane is not in an ulcerated condition, nor are the products of inflammation present.

The congestion is capriciously distributed, more intense in some places than others. Peyer's patches are not necessarily affected. The lungs are slightly emphysematous.

This is a short description of a disease which has engaged the attention of scientific men at various epochs. The mortality of the disease has varied slightly in different countries; in Africa, however, it approached the enormous fatality of 98 per cent. As might be expected, many different lines of treatment were advocated at different times, but without any evidence of success. I cannot do better than here quote the words of Dr. Arthur Wynne Foot, of this city, who, when Rinderpest was raging in England during the years 1866-67, had special opportunities of studying the disease, and who has written largely and with great accuracy on the subject. He says :—"The prospect is gloomy in the extreme when we approach the treatment of an animal actually affected with 'the cattle plague,' for the results of experience almost invariably show that the percentages of recovery are about equal, whether animals are medically treated or not, and medicines which succeed in one case may fail in the next. When the cattle plague first appeared in England, and those who had observed it in Eastern Europe pronounced that the poleaxe and isolation were the only remedies to be employed, and confidently predicted the result of dallying with the disease in the hopes of exterminating it otherwise, their warning was not acceptable to the scientific tendency of the age. Yet the truth of their words is now evident. However mortifying it may be to the scientific mind of the present day, the fact is yet unpleasantly true and may certainly now be received as established, that as a general rule treatment of any kind is worse than useless." Such was the opinion expressed and very generally accepted in 1867. Let us now turn to the methods employed in South Africa just thirty years later for the purpose of combating this dreadful disease.

Many months before Rinderpest reached Cape Colony many measures were discussed in the House of Representatives at Cape

Town how best to protect the country from its onslaught. It was decided to requisition the services of Professor Koch, from Berlin. He came and at once set up his laboratory at Kimberley, and began a series of experiments so as to find out some means which would confer immunity from the disease. After many experiments with several animals without any tangible result, he at length began to study the bile contained in the gall-bladder of a beast suffering from Rinderpest. He noticed the gall-bladder was nearly always over-distended with bile, and also that this bile was, of all parts of the animal, the least affected by the disease. The quality of the bile in different animals, however, varied. In some it was of a dark green colour, free from blood and decomposing matter, and to all appearances normal. In others it contained both blood and elements of decomposition, and was of a dirty yellow or brownish colour; in fact these various conditions of the bile seemed to depend on how much or how little the disease had affected the mucous lining of the gall-bladder. He now began experimenting with bile of the first type—namely, dark green in colour, free from blood, and of normal consistency, taken from a beast suffering from Rinderpest and in the collapsed condition of the fever. After many experiments he found that by inoculating a beast which was perfectly healthy with 10 cc. of this bile, he was able to confer on it immunity from the disease, provided due precautions were taken during the operation that the animal did not become infected either by the attendants or the operator. This immunity he also found did not set in till the fifth day after the inoculation, so that for the success of the operation it was also necessary that the animal did not become subject to infection up to that time. Koch now made known his experiments and the results. Rinderpest, however, had not as yet broken out in Cape Colony. The Government, after carefully considering the matter, decided not to introduce Koch's method of inoculation, because that measure would not only increase the risk, but almost inevitably result in the introduction into the country of the disease. They resolved in the meantime to adopt other measures so as to prevent the disease getting into the country.

With this purpose in view, a double line of wire fencing, enclosing a belt of country two thousand yards in breadth, was erected. This fence extended along the entire border line of Cape Colony, and was continued by the Natal Government on the east, so that there extended across the entire country a fence reaching from seaboard to seaboard. Thousands of volunteers were now enrolled at fixed salaries of ten shillings a day for the purpose

of guarding and patrolling this fence. One portion of it, about 50 miles in extent, was considered of great importance, and a squadron of Cape Mounted Riflemen were appointed to take charge of it. It was while a member of this squadron that I was first brought face to face with Rinderpest.

This was the position of affairs at the beginning of 1897. The huge fence had been erected, and was being patrolled night and day by thousands of men awaiting attack from this dreaded and invisible enemy. Step by step the disease approached at the rate of about one hundred miles a week, and many were the conjectures as to the possibility of its being stayed. In spite of every precaution, however, the disease broke out on a farm at the border, on the Cape Colony side of the fence. On this farm, on which I happened to be stationed, there were over four hundred and ninety head of cattle.

The Government now sent up orders that all the cattle on this farm were to be shot, and also the cattle on any other farms, on which Rinderpest should happen to break out. This was compulsory shooting, for which the Government had to pay compensation to the farmers, to the extent of about two-thirds value of the cattle. In a week's time from the first outbreak, four farms had become infected, and over eight hundred head of cattle had been shot.

The Government now became frightened and sent up another order cancelling the stamping out policy, and leaving everything in the hands of the farmers themselves, who were to do the best they could to prevent Rinderpest from spreading. The farmers now decided to adopt inoculation as a last hope. The resources of the Veterinary Department were, as a result, taxed to the uttermost, because once inoculation was started it had to become more or less general. Through a friend of mine I was appointed on the staff for the purpose of carrying out inoculation, and was at once installed in this district in which, as I have described, Rinderpest had broken out.

The method of inoculation advocated by the Veterinary Department was the method of Koch. The operation in detail is as follows:—A beast suffering from Rinderpest, and in the last stages of the disease, is shot. It is placed with its right side uppermost. An incision is made into the abdominal cavity along the lower margin of the ribs. The gall bladder is exposed, and the neck of it is seized between the fingers and thumb. It is now detached with a small portion of the liver. The gall bladder is now thoroughly washed with water, and disinfected with some antiseptic

solution. It is now punctured at some non-vascular part, usually at the bifurcation of a small artery, and the bile is received into vessels which had been previously sterilised with alcoholic solution. The Government were very liberal in the supply of Cape brandy for this purpose. It was also used for other purposes, indeed I might say principally other. If the bile answered the conditions laid down by Koch, it was retained for inoculation purposes. Of the number of cattle shot for the purpose of bile, on the average only two out of every five rendered bile fit for inoculation. Indeed no rule seemed to be able to be laid down, as far as experience went, with regard to the animals most likely to furnish bile answering Koch's conditions. The next thing that is done is to repair to some place where every person taking part in the work of obtaining the bile can be thoroughly fumigated. This is performed by exposing oneself to the fumes of burning sulphur in a fumigating box for about twenty minutes. These fumigating boxes were something like large sentry boxes with three round holes, one in the roof and two in the sides, for the purpose of allowing the heads to be put out. The saddlery and other accoutrements were also fumigated, and the horses had their hoofs washed and their noses wiped with a solution of Jeyes' fluid. Having obtained the means for carrying out the operation, we now proceed to the actual operation itself.

The cattle are driven together into an enclosed place, called in South Africa a cattle kraal; this is usually a rectangular space surrounded by a wall, about five feet high, built of rough stones. Fifty or one hundred head are driven into these kraals, according to their size, and a band of natives, of about ten or twelve, is employed catching and throwing them. They first lasso the beast by the horns, which in South African cattle are exceedingly large. Then a rope is passed round the hind legs, and another round the fore legs. The horns and the tail are now pulled in one direction, and the feet in the opposite, and the animal is most expeditiously brought to the ground. The temperature of the beast is now taken; if it be normal, and no other suspicious symptoms be present, the animal is inoculated in the dew-lap with 10 cc. of bile, having previously disinfected the surface of the skin where the needle was inserted. With a handy set of natives it was possible to inoculate in this way up to two hundred head in a single day. It was, however, a very hard day's work, and such as in South Africa white men are not accustomed to.

Koch's method of inoculation in South Africa proved a failure.

However favourably one may regard the results obtained by him in the compound at Kimberley, surrounded as he was by skilled assistants, who had ample means at their disposal for preventing infection, we cannot overlook the fact that to perform the operation in the open country, and in a district already infected with the disease, was a work which had in it many of the elements of failure.

The first attempt I made with Koch's method was in a small herd of fifty-seven. These belonged to a farmer on whose farm Rinderpest had already broken out, but they were completely isolated on the top of a mountain from the rest of the cattle on the farm. These fifty-seven were each inoculated with 10 cc. of bile. After the inoculation their temperatures went up to 105° and 107° F., but gradually became normal. On the tenth day after the inoculation the cattle appeared again in perfect health. To prove that these cattle were now immune from the disease, they were inoculated again on the twelfth day after the first inoculation with 1 cc. of Rinderpest blood mixed with 9 cc. of salt solution. Their temperatures again rose, and the animals to all appearance were suffering from mild Rinderpest, which also passed off in from seven to ten days.

Of the fifty-seven thus treated, seven succumbed to the second inoculation, while the remainder remained in perfect health, although subjected all round to Rinderpest infection. This result made me for a long time a firm believer in Koch's method.

Other cases, treated in precisely the same way, gave results sometimes good and sometimes very bad—in fact the unfavourable results were so discouraging that already in a great many districts Koch's inoculation had been abandoned. If we bear in mind the fact that in all cases where the gall inoculations of Koch were successful the cattle must have been free from all infection or traces of Rinderpest, not only at the time of the inoculation but for five days later, when the period of immunity sets in—if we bear this in mind I think we will be able to find some good reasons why Koch's method of inoculation did not succeed. We have first of all the method of obtaining the bile. In a disease, the subtlety of the contagion of which is without a parallel, one must confess that it is a method involving great risks of infection.

Secondly, the immunity conferred by the bile did not set in till the fifth day, and if in the meantime any infection should reach a herd thus inoculated it will generate the disease in a most disastrous manner.

Thirdly, the period of incubation being from three to five days there was always the great risk in an infected district of herds, apparently healthy, having already the germs of the disease in the process of incubation. These three reasons amply account to my mind for the failure of Koch's gall inoculation. It was no doubt a great theory, but practical men could not make use of it with much prospect of success. While Koch's method was being tested, another way of combating the disease was gradually forcing itself upon the attention of inoculators. It is a very novel method, and one which I am sure will appeal to all of us. It owes its success to two French experts, Drs. Dansyx and Bordet, who were experimenting in the Transvaal while Koch was carrying on his experiments in Kimberley. It is a curative method of treatment as opposed to Koch's method of prevention. It is essentially a system of immune blood treatment. After many experiments with the blood of animals which had recovered from the disease, they found that by taking blood from an animal between 30 and 100 days after its complete recovery and using that blood for the purpose of inoculating cattle already infected with the disease, they were able to check the disease, and the animal rapidly recovered, provided the disease had not gained too much hold. The quantity of blood used for the inoculation varied from 100 to 200 cc., according to the progress of the disease.

This is a method for the success attendant on which I am prepared to vouch. I inoculated many hundreds of cattle already infected with the disease by this method, and saved 70 per cent., those cases that succumbed being invariably cases where the disease had gone too far. The method of procedure is as follows:—An animal that has suffered from Rinderpest, and between 30 and 100 days after its complete recovery, is bled from the external jugular to the extent of about three or four quarts. The wound is closed up again. The blood is now defibrinated and used for inoculating purposes. The blood is injected subcutaneously. The quantity used for one inoculation was usually about 150 cc.

Not having any hypodermic syringe of this size, and being unable to get one, I used an ordinary enema syringe, one end of which was inserted in a bottle containing a fixed dose, while to the other end was attached the needle.

This method of immune blood inoculation eventually proved to be the means by which Rinderpest was baffled in Cape Colony. Many improvements have since been made upon the method, which was first brought before the public by the two French experts,

Dansyx and Bordet; instead of using the blood which had been previously defibrinated, the serum only need be used. This serum can also be preserved for an indefinite time in a solution of phenol. Besides, the curative properties of the serum can be increased by previously inoculating the animal from which the blood is to be obtained, with first 100 cc. of Rinderpest blood, followed by 200 cc., then 400 cc., up to 800 and 1,000 cc. of Rinderpest blood. By this means the curative properties of the serum are greatly increased, and much smaller quantities of it are sufficient for inoculation.

Is not this one of the purest experiments that has yet been made upon the question of the antitoxin treatment, if I may call it so, of zymotic disease? We have here the immune blood taken from an animal of the same species. This is, I think, an important point, and should not be overlooked, and just as the immune blood taken from an animal of the same species would contain the curative properties in a greater degree than that taken from an animal of a different species, so I hold that immune blood taken from an animal or man of the same family is even better than that taken from the same species.

Note also that the serum derived from this immune blood can be preserved for an indefinite time without losing its properties, and so is always available. And again, the curative properties of this serum can be increased to a wonderful degree. Are not all these points of practical importance?

In describing these two methods of inoculation—i.e., Koch's preventive and Dansyx and Bordet's curative—I have not said anything with regard to the means by which one or other method confers its immunity. The theories that have been put forward to account for the action of these and similar methods of antagonising bacterial diseases are, to my mind, insufficient, and based upon results that have reacted in individual cases. To have a sound theory one must be able to observe its workings towards similar results in very dissimilar objects of application.

M. Pasteur may justly be deemed the first to overtake and suppress by inoculation a process of specific infection. His theory of action may be called "the Theory of Attenuated Virus."

With regard to this theory, which has deeply permeated the mind of each one who engages in the study of immunity, I shall ask this question—has it been proved to be a sound theory by its successful use in many dissimilar objects of application, or is its more or less general acceptance due to the success attendant on its application to hydrophobia? To my mind we must conscientiously

admit, after ~~carefully~~ studying the matter, that it is due to the ~~latter~~ fact. The success which M. Pasteur obtained in the treatment of hydrophobia by what he called "attenuated virus" can be explained by a very different theory, and which is in reality but a part of a more general theory which explains all the various and subtle processes of inoculation conferring immunity.

The preventive method of vaccination against small-pox, the so-called attenuated virus methods of inoculation for cholera in chickens, anthrax in sheep, and hydrophobia in man, the antitoxin method in diphtheria, and the coming methods in typhoid fever and tuberculosis, are all brought in this theory very closely together, and are represented as special examples of the general means by which immunity is conferred. I do not for several reasons bring this theory under the fire of criticism in this paper, but merely show that my views are somewhat opposed to the present expressed theories as to immunity conferred by inoculation.

Whatever in the future I see, or fancy I see, in store for the antagonising of disease by inoculation may be mere dim visions, nevertheless, through whatever medium each one of us may look, I think you will all agree that there is an extensive field for interesting observation and research.

ANATOMICAL PROPORTIONS OF DIFFERENT RACES.

PROF. ARTHUR THOMSON, in *Knowledge* (June, 1899), gives us an elaborate article on the proportions of the human subject in various races—trunk to limbs, limbs to limbs, segments of limbs to each other, and so on. The advantage of this kind of information is best displayed in graphic form, so that the eye may pick out the characteristics of each type. He therefore gives skeleton sketches merely of straight lines. "The long arms and the long legs of the negro are at once apparent, the shortness of the upper in contrast with the lower limb in the white man is very evident, whilst the short trunk, and proportionately longer lower limbs of the Australian are strikingly displayed. The proportion of the upper limbs in the Javanese and Southern Chinamen is almost the same, but the shorter lower limbs of the latter are readily recognised. It is along such lines as these that we venture to think progress will be made. Provided we can obtain the necessary measurements we can then present the results in a form which will demonstrate with greater clearness and more lasting effect those minor differences, on the sum of which racial distinctions depend."

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—EDWARD H. BENNETT, M.D., F.R.C.S.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF OBSTETRICS.

President—F. W. KIDD, M.D.

Sectional Secretary—J. H. GLENN, M.D.

Friday, February 10, 1899.

The PRESIDENT in the Chair.

Specimens Exhibited.

DR. E. WINIFRED DICKSON—Small ovarian cyst removed by laparotomy.

DR. W. J. SMYLY—(a) Four myomatous uteri removed by coeliotomy; (b) Ectopic gestation removed by coeliotomy.

DR. F. W. KIDD—Three cases of ovarian multilocular cysts removed by coeliotomy.

DR. PUREFOY—(a) Quantity of hair from dermoid tumour; (b) Case of pyosalpinx removed by coeliotomy; (c) Foetus arynchus; (d) Foetus showing procidentia uteri.

DR. GLENN—(a) Case of dermoid tumour of both ovaries removed by coeliotomy; (b) Epithelioma removed by excision from the left labium majus.

DR. ALFRED SMITH—(a) Fibro-myoma of the Fallopian tube; (b) Case of adherent ovary, tube and vermiform appendix removed by coeliotomy; (c) Two cases of multilocular ovarian cysts.

Discussion on the Rotunda Hospital Obstetrical Report.

DR. MORE MADDEN said the record was most creditable. He believed this was due to the strict asepsis practised in the hospital. Dr. Purefoy had set a good example in the use of ergot in *post-partum* hæmorrhage. Though it was an old-fashioned treatment it was most effective.

DR. W. J. SMYLY thought it was a very great gain to have done away with the plug in the treatment of abortion. In the treatment of placenta prævia the same method was used at present as during his tenure of office at the Rotunda Hospital, when there was not

one death as the result of hæmorrhage from placenta prævia, though two cases had ended fatally. One of these patients had been delivered by the old method of version and immediate delivery, and had died after a short time from hæmorrhage and rupture of the cervix, and the other had died on the 10th day of pulmonary embolism. Coming to accidental hæmorrhage, he considered that the best treatment was still practised—namely, that if the patient had not strong labour pains it was a mistake to rupture the membranes, and if there was external hæmorrhage the uterus should be plugged. In London, students taught at the Rotunda had been rejected at examinations for not saying that they would rupture the membranes in such cases. Even the nurses who go up for the examination of the Obstetrical Society were instructed beforehand to say, if asked what they would do in a case of accidental hæmorrhage, that they would rupture the membranes, which, he thought, would be most improper. He objected to the use of the expression “the induction of artificial abortion” in the Report, as the term had a considerable amount of opprobrium attached to it, and he considered that it would be better to say that they accelerated abortion.

DR. MACAN pointed out that the mortality of the internal department was, contrary to what they would expect, twice that of the external department. He deprecated the time limit of 4 hours as an indication for the application of the forceps as given in the Report. Indications on the part of the mother or child were admissible, but the time indication was ridiculous. He concurred with Dr. Smyly in objecting to the expression “the induction of artificial abortion.” He noticed a case of eclampsia which was stated to be absolutely free from albuminuria, and therefore not capable of being explained by the ordinary theories. There was a case of brow presentation above the brim where the forceps had been applied. He thought that the forceps was contra-indicated in such a case.

DR. KIDD referred to the fact that in about 50 per cent. of the cases of rise of temperature after delivery no explanation of the cause of this rise could be given. Surely they did not return to the old idea that it was due to milk fever, and that the poison was not of sufficient intensity to exhibit itself in the vaginal discharge.

DR. PUREFOY, Master of the Rotunda, in reply said that, with regard to the use of ergot in *post-partum* hæmorrhage, it was needless to say that they used it only when the placenta was absent. They employed Squibb's preparation of ergot, and he commended its use as it had given satisfactory results. One possible explanation

of the fact that the mortality was greater in the internal than in the external department was, of course, that the bad cases in the external maternity were admitted into the hospital. The 4 hour limit was only one and the least important indication in the use of the forceps. The other indications on the part of the mother and the child were also taken into account. He agreed that it was unsatisfactory not to be able to assign a cause to the cases of rise of temperature which Dr. Kidd had referred to, but the fact remained that they were unable to give a tangible cause for the elevation, as a large number were not interfered with, even to the extent of a vaginal examination.

The Section then adjourned.

SECTION OF SURGERY.

President—R. L. SWAN, President of the Royal College of Surgeons

Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

Friday, March 3, 1899.

The PRESIDENT in the Chair.

Living Exhibit.

MR. JOHN LENTAIGNE—Case of arthrectomy for tubercular disease of knee-joint eight weeks after operation.

Diseases of the Foot.

MR. W. I. DE COURCY WHEELER read a paper on some diseases of the foot. Having described the anatomical points bearing upon the subject, and entered fully into the distribution of the synovial membranes, he detailed five cases of complete excision of the os calcis, followed by the most satisfactory results; one case of excision of the os calcis and astragalus, with portions of the tibia and fibula; 13 cases of medio-tarsal operation, or Chopart's operation, all showing as favourable results as the patient (exhibited at the Society) on whom he performed this operation twenty years ago; also three cases of complete excision of the astragalus for disease, besides others for compound dislocation. There was a brief record of 39 cases after Symes' operation, also results after Tripier's operation, which Mr. Wheeler was of opinion had as many advantages over the subastragaloid operation as Chopart's had, but it has not the advantages claimed over the medio-tarsal operation, except with those who believe that in Chopart's operation the astragalus is thrown forwards against the scar, which is

quite preventable in a properly executed medio-tarsal operation, and does not occur when the plantar flap is made sufficiently long. After a record of the excisions of various bones of the foot, and six resections of the first metatarso-phalangeal articulation, the paper concluded by a description of metatarsalgia, Madura foot, and two cases of podal coma, so graphically described by Professor Miller. One case completely recovered, the second had a recurrence of the disease. There was no history of any constitutional or predisposing cause why the patient's foot—a male about thirty-two years of age—should be attacked by this painful disease, except in Miller's words, his "system was weak and miserable." His parents were both alive, and remarkably healthy.

A discussion followed, in which MR. H. G. CROLY, MR. T. MYLES, the PRESIDENT, DR. HENRY FITZGIBBON, MR. CHANCE, and SIR FRANCIS CRUISE took part.

MR. WHEELER, in reply, said that excision of the os calcis was favourable, because the synovial sac is limited, thus preventing rapid extension. The sooner the bone is removed the better, and he did not approve of the gouge in removal, because it was difficult to say whether one was in healthy or unhealthy tissue, and still more, in strumous patients the use of the gouge might set up inflammatory action which would produce more carious disease. The podal coma he had seen was the same as that described by Miller.

Perforating Gastric Ulcer.

MR. T. MYLES read a paper on "Perforating Gastric Ulcer," and mentioned a number of cases on which he had operated.

Amongst the most interesting of these was that of a gentleman aged 72, who after the reduction of an umbilical hernia, developed symptoms of perforation. The patient was under the care of Sir Francis Cruise and Dr. Moran. When Mr. Myles was called in the patient was sinking rapidly, with great pain and tenderness, persistent vomiting of black tarry matter, evidently blood, complete absence of liver dulness, tympany, &c. Operation seemed hopeless, but was undertaken in consequence of the dreadful agony patient was suffering. The perforation was easily found, sutured, and abdomen freely douched with hot saline. Patient [made a complete recovery. The author pointed out that the] ease with which an anterior perforation was found and handled contrasted markedly with what happened when the perforation was behind, and extravasation occurred into the sac of the peritoneum. A number of interesting cases were detailed, and some illustrated clearly the great difficulty of accurate diagnosis.

SIR F. CRUISE bore out all Mr. Myles said in his paper. He had learnt from the case *nil desperandum*. The patient was almost pulseless at the commencement of the administration of the chloroform; the pulse became much better when the chloroform was changed to ether. The result of the operation was most extraordinary.

MR. WHEELER congratulated Mr. Myles on the excellent result, which showed that early operation offers better chances of recovery than delayed operation. He preferred swabbing out the abdomen to douching. He had seen saline solution revive a patient on whom he operated for tubercular peritonitis. It depended on the position of the perforation of the stomach whether the operation could be rapidly done or done at all.

MR. CHANCE mentioned the case of a young woman with gastric ulcer who suddenly became collapsed with symptoms of perforation. Laparotomy was at once performed, but thorough examination of the stomach revealed nothing. The abdomen was closed, and recovery followed. In another case, that of a woman, he opened the abdominal cavity, and found in an abscess a small cavity, a good deal of flocculent material, and a considerable quantity of undigested food. He drained the abscess, and recovery followed. The mortality of stomach operations seemed very high according to statistics, because the operation was done for malignant disease.

MR. MYLES replied.

The Section then adjourned.

SECTION OF PATHOLOGY.

President—J. M. PURSER, M.D.

Sectional Secretary—E. J. McWEENEY, M.D.

Friday, February 24, 1899.

The PRESIDENT in the Chair.

Pneumococcal Septicæmia with Ulcerative Endocarditis consecutive to Croupous Pneumonia.

DR. McWEENEY communicated this observation. The patient, a man aged thirty-seven, was admitted on the 5th of December, 1898, to the Mater Hospital, under the care of Dr. Murphy, with right apical pneumonia. Crisis occurred on the ninth day, and was attended with a good deal of collapse. Ten days afterwards patient was allowed up one evening and got very weak. On January 1st,

an aortic systolic murmur developed, which became very bad; patient became prostrate and delirious, the temperature curve assumed a pyæmic type, and death ensued on the 5th of January. On the 2nd blood was taken, with strict precautions, from the finger, and inoculated by means of a pipette on several tubes of oblique glycerine agar. After twenty-four hours incubation at 37°, one of these tubes presented a few extremely minute dewdrop-like colonies, which proved to consist of Fränkel's pneumococcus. The other tubes remained sterile as far as could be seen. At the autopsy (forty-eight hours after) blood was aspirated from the right auricle into a sterile bulbed pipette, and inoculated on agar tubes. Owing to the solid coagulation, but little liquid could be obtained. The incubated tubes showed numerous large circular colonies, like discs of porcelain (probably the *Bacillus coli*) but also very many minute whitish, very delicately fringed colonies, which proved to be the pneumococcus. A broth culture from one of them, after twenty-four hours at 37°, was scarcely turbid, yet 1 c.c. injected intraperitoneally into a rabbit caused death in seventeen hours. Pneumococci with typical capsules were in the blood of every organ examined. The other *post mortem* results were, briefly: pericardium universally obliterated by recent adhesions, parietal layer being readily stripped off; myocardium of auricles soft and friable like wet blotting paper. Right posterior cusp of aortic valve presented a mass of vegetations as big as a cherry—colour, greyish green where not covered with clot; behind this the cusp perforated, hole would admit an ordinary pen handle. Grey hepatisation of most of the right lung. Spleen twice the natural size, infarcted throughout. Embolus in primary branch of splenic artery, fibrinous, crammed with pneumococci.

Case of Hodgkin's Disease.

DR. J. B. COLEMAN read a communication on the subject of Hodgkin's disease, and related a case of the disease which was remarkable for the acute clinical course, and for the widespread distribution of the lesions. The patient, a labourer, aged fifty, had enjoyed good health up to eleven weeks before his death. He gave no history of alcoholism or syphilis. Glandular enlargements first appeared in the left cervical and axillary regions. On admission to hospital, three weeks before his death, he was somewhat emaciated, but not anæmic; skin dry and scurfy; pulse and temperature normal; all the superficial glands were considerably enlarged, and there was evidence of enlargement of the thoracic and abdominal glands also; the glands were soft, freely movable,

and painless; spleen was easily palpable and liver dulness increased. Examination of the blood showed hæmoglobin and red cells normal, the white cells 11,200 per cubic m.m.; 40 per cent. of the white cells being lymphocytes; the blood contained no micro-organisms. The patient rapidly became more and more prostrate, temperature was usually normal or subnormal, but on three occasions in three weeks it mounted to 100.5° ; his appetite failed, he became delirious, and died with symptoms of toxæmia eleven weeks from the onset of the disease. The necropsy disclosed universal enlargement of the superficial lymphatic glands, as well as of the mediastinal, retroperitoneal and mesenteric glands; adenoid nodules were present in kidneys, spleen, liver, and intestines; the spleen was greatly enlarged, and growing from its capsule, as well as from that of the liver, were large masses of adenoid material; below the liver the retroperitoneal glands were enlarged and massed into a tumour, which surrounded the aorta and involved the adrenals. Cultural and inoculation experiments were carried out with the assistance of Dr. McWeeney with negative results. Dr. Coleman mentioned the arguments in favour of Hodgkin's disease being of an infective nature, and pointed out that numerous observers had found micro-organisms in the diseased glands. He also contrasted the disease with leucocythæmia, and said that Cohnheim regarded Hodgkin's disease as an aleukæmic *Vorstadium* of leukæmia, whilst numerous observers had noted the transition of the one disease into the other.

DR. E. J. MCWEENEY said that he had received the organs in this case in a fresh state, and, along with Dr. Coleman, had made an exhaustive bacteriological examination. A great number of tubes were inoculated, including serum of the ordinary kind and glycerine serum. Inoculation was also done on a rabbit intraperitoneally with about two or three grams of the lymphoid material ground up in an aseptic mortar. Examination of the rabbit a month later showed no trace of the cellular material. Nothing whatever grew upon any of the substrata. Therefore, he thought that this well-marked case of Hodgkin's disease was not dependent upon any micro-organism capable of being made to grow in the ordinary way. If shown the sections from the liver and kidney as a fresh case, he should describe them as having the histological characters of a small round-celled sarcoma, rapidly infiltrating and destroying the specific tissue of each of the organs. The characters were more like those of indifferntiated embryonic tissue rather than the differentiated lymphoid structure of lymphatic glands and spleen. It undoubtedly spread along the portal canals in the liver,

and along the large blood vessels in the kidney. The specific tissue of the organs literally seemed to melt away before the advancing army of the new cells. Mitoses were not found to anything like the extent that one would expect from the rapid neoplastic process. A very remarkable feature was the occurrence of localised amyloid degeneration in the vascular apparatus of the affected organs. He asked Dr. Coleman if there was any history of suppuration, syphilis, or tuberculosis to account for the lardaceous disease. In the absence of these, the lardaceous change must be considered part and parcel of the morbid appearances. One of the cardinal symptoms of Hodgkin's disease was absent in this case—viz., *oligocythæmia rubra*.

BRIGADE SURGEON-LIEUT.-COL. BURKE said when at Gibraltar and Malta he had seen many specimens of amyloid degeneration, and the liver specimens now exhibited were very like those he had seen due to syphilitic disease.

DR. COLEMAN, in reply, said that there was no history of syphilis or long-continued suppuration. Regarding the cardinal symptom of anæmia, he said that anæmia is not necessarily a part of Hodgkin's disease, and only becomes marked as the case progresses. Anæmia has been noted absent in undoubtedly true cases of the disease.

Epithelioma of Lip from Youth Eighteen Years Old.

MR. G. JAMESON JOHNSTON read the notes and exhibited microscopical sections of a case of epithelioma of the lip in a youth eighteen years of age. The case had been reported in the *British Medical Journal* in October, 1898, and the report elicited several communications doubting the diagnosis. The microscopical appearances were so obvious to him that he proposed merely to submit the specimens for the examination of the members of the Academy.

Breast containing New Growth removed from Youth Seventeen Years Old, with Microscopic Sections.

MR. JOHNSTON also exhibited the left breast of a male patient, containing a new growth in the left upper quadrant, about the size of a large walnut; radiating processes of the growth extended in every direction into the gland substance; the consistence of the mass was quite firm, and to naked-eye examination very like scirrhus. It had been steadily growing for three months in spite of medical treatment, causing some slight discomfort, not actual pain; there was no retraction of the nipple or dimpling of the skin;

the glands along the lesser pectoral were palpable before operation. No history of injury could be obtained. The whole breast and connective tissues and glands along the pectoralis minor were removed. The wound healed by first intention. At the present time (twelve hours after operation) no recurrence can be seen or any enlarged glands felt. Microscopical examination showed the growth to be mainly fibrous tissue, with what appears to be a few short columns of gland cells here and there. Mr. Johnston felt a difficulty in classifying the growth, and asked for expressions of opinion as to whether it should be described as chronic inflammatory, fibro-adenomatous or otherwise.

DR. A. C. O'SULLIVAN thought that no one could doubt that the first section was a squamous cancer. The breast section in some places showed nothing but fibrous tissue, in other places it showed a certain quantity of glandular structure. He was inclined to speak of it as a fibro-adenoma.

DR. E. H. BENNETT said that a similar case of epithelioma of lip in a youth of eighteen had been described in Pott's works.

DR. E. J. MCWEENEY considered the epitheliomatous nature of the lip tumour most typical. The breast tumour appeared to him to be chiefly fibromatous, if not exclusively so. There were some tract-like structures composed of cells in elongated bands or strips throughout, but the high power showed them to be more of the nature of small thick-walled arteries running in the connective tissue rather than glandular structures. However, there were also some large oval spaces packed with cells which might indeed be of glandular origin, perhaps of new formation, perhaps atrophic portions of the mammary gland. He quite recently saw a breast tumour removed by Mr. Hayes with exactly the same microscopical structure as Mr. Johnston's, but its naked-eye appearance was that of scirrhus, except that it did not present any of the little yellowish masses of fatty degenerated epithelial cells commonly seen.

MR. G. J. JOHNSTON, in reply, said that although he felt very much inclined to agree with Dr. O'Sullivan from his description of the structure of the breast tumour, still he was not inclined to accept his naming it a fibro-adenoma. This tumour was absolutely non-encapsuled. He doubted if the tumour of the lip recorded by Pott as epitheliomatous was really epitheliomatous in the absence of pathological investigation like that of the present day.

Sarcoma of the Suprarenals and Secondarily of the Lung.

DR. J. MAGEE FINNY showed the left lung and the right and left suprarenals, which were the seat of sarcoma, with micro-

scopical sections of the lung made and explained by Dr. O'Sullivan, Lecturer in Pathology, Trinity College, Dublin. The patient was a man of sixty-six years, who was admitted to Sir Patrick Dun's Hospital, October, 1898, suffering from great prostration and cough, and pain in the left side. The only well-marked signs he possessed were those of encysted left pleural effusion, without displacement of the heart, and on exploration the diagnosis was confirmed and the fluid found to be bloody. This character and his constitutional cachexia made the diagnosis to be cancerous pleurisy. The patient's colour was very dark, but without the characteristics of Addison's melasma, while the sputum was free from tubercle bacilli, and the urine from albumen. Death from exhaustion took place March 20th, 1898. The morbid specimens showed the left suprarenal to be converted into a mass of bloody sarcoma the size of a goose egg—the natural tissue of the gland was obliterated, and the sarcoma, which was unencapsuled, rested on and partly invaded the top of the left kidney, and was in intimate relation to the renal vein; from this vein a branch passed directly into the sarcoma. The right suprarenal was also converted into a sarcoma of similar character, but it was the size of a small hen's egg. The left pleura was greatly thickened and rough, and contained a quantity of bloody exudation which was strictly encysted, as had been mapped out during life; the layer of pleura pulmonalis was equally thick, and completely separated the effusion from the pulmonary tissue. The centre of the lower lobe of the left lung was a mass of soft broken-down sarcoma which seemed to pass at different depths into the surrounding healthy lung tissue. The microscopical character of sections of the left kidney and of the lung showed sarcoma of a mixed character, and, what was most remarkable and strange, a number of giant, polynuclear, or myeloid cells—containing as many as twelve or fourteen nuclei cells, which resembled exactly those found in sarcoma springing from the periosteum or ends of bone. The case presented therefore the rare peculiarity—not unknown in the life-history of sarcoma—of reproducing cells of connective tissue type, which is *not* that of the matrix from which it grew, inasmuch as there was a complete absence of any bone disease. The other point of interest lay in the sequence of the diseased organs. From the rarity of sarcoma being a primary disease of the lungs, and the frequency of the suprarenals being the first affected, it is not improbable, as Dr. O'Sullivan suggested, that the disease originated in the connective tissue or vessels of the left adrenal, that by the open vein it passed through the left renal vein into the circulation,

and directly affected the right adrenal, and by embolic infarction it found its final resting place in the substance of the left lung. The most careful examination failed to show any extension from the adrenals to, or through, the diaphragm.

DR. E. J. McWENEY said that some of the sections showed a very marked resemblance to tissue which he found in the kidney as the result of an aberrant suprarenal growth originating from an aberrant fragment of suprarenal. The curious thing seen in the section was the presence of enormous giant cells, entirely like the myeloid cells of bone.

Melanotic Sarcoma of Chorioid.

DR. E. J. McWENEY (for DR. COLE BAKER) showed a melanotic sarcoma of chorioid.

Pathological Fibulæ and Patellæ.

DR. KNOTT demonstrated a series.

The Section then adjourned.

LITERARY INTELLIGENCE.

SOME of the new books to be issued at an early date by Messrs. J. and A. Churchill are as follows:—A work on "Medical Electricity for the Use of Students and Practitioners," by Dr. W. S. Hedley, Physician in Charge of the Electro-Therapeutic Department of the London Hospital; "The Pathologists' Handbook: A Manual for the Post-Mortem Room," by Dr. T. N. Kelyneck, Demonstrator in Morbid Anatomy at Owens College, Manchester; "A Text-Book of Physics," by Professor Andrew Gray, F.R.S., Professor of Physics in the University College of N. Wales; the book will be issued in three parts, the first to come out being that on Dynamics, Properties of Matter; "A Handbook on Chemistry and Physics for Students preparing for the first examination of the Conjoint Board," under the joint authorship of Messrs. Corlin and Stewart; the sixth edition of Dr. Eustace Smith's "On the Wasting Diseases of Infants and Children;" the third and enlarged edition of Dr. Bezley Thorne's "Schott Methods of the Treatment of Chronic Diseases of the Heart;" "Notes on Folkestone," with a Map of the Town, by Dr. Larking. The foregoing books will in almost every case be very fully illustrated.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D. Univ. Dubl.;

P.R.C.P.I.; F. R. Met. Soc.;

Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four Weeks ending Saturday, May 20, 1899.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	April 29	May 6	May 13	May 20			April 29	May 6	May 13	May 20	
23 Town Districts	26·3	23·1	22·9	24·0	24·1	Limerick -	30·9	—	8·4	18·2	—
Armagh -	21·4	21·4	21·4	14·3	19·6	Lisburn -	42·6	21·3	0·0	8·5	18·1
Ballymena	5·6	22·5	28·2	11·3	16·9	Londonderry	28·3	11·0	17·3	20·4	19·3
Belfast -	22·5	24·1	24·6	25·6	24·2	Lurgan -	31·9	22·8	13·7	22·8	22·8
Carrickfergus	40·9	17·5	17·5	17·5	23·4	Newry -	52·3	8·1	8·1	12·1	20·2
Clonmel -	14·6	19·5	39·0	24·3	24·3	Newtownards	5·7	39·7	17·0	45·4	26·9
Cork -	31·8	22·8	18·0	23·5	24·0	Portadown -	12·4	37·1	6·2	30·9	21·7
Drogheda -	45·6	11·4	41·8	38·0	34·2	Queenstown	5·7	17·2	11·5	34·4	17·2
Dublin - (Reg. Area)	29·4	24·3	26·0	25·5	26·3	Sligo -	60·9	10·2	15·2	20·3	26·6
Dundalk -	16·8	16·8	29·3	4·2	16·8	Tralee -	0·0	33·6	28·0	16·8	19·6
Galway -	11·3	26·4	34·0	11·3	20·8	Waterford -	23·9	21·9	19·9	23·9	22·4
Kilkenny -	9·4	42·5	4·7	28·3	21·2	Wexford -	18·1	9·0	18·1	4·5	12·4

In the week ending Saturday, May 20, 1899, the mortality in thirty-three large English towns, including London (in which the rate was 16·3), was equal to an average annual death-rate of 17·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 19·0 per 1,000. In Glasgow the rate was 20·5. In Edinburgh it was 18·4.

The average annual death-rate represented by the deaths registered during the same week in the Dublin Registration Area and in the twenty-two principal provincial Urban Districts of Ireland was 24·0 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,053,188.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in sixteen of the districts to 5·6 in Tralee—the 3 deaths from all causes registered in that district comprising one from diphtheria. Among the 172 deaths from all causes registered in Belfast are 6 from measles, 3 from whooping-cough, one from diphtheria, one from simple continued fever, 6 from enteric fever, and one from diarrhoea. The 34 deaths in Cork comprise one from each of the following:—Measles, whooping-cough, and enteric fever. Among the 13 deaths in Limerick are one from enteric fever and one from diarrhoea. The 12 deaths in Waterford comprise 2 from measles.

In the Dublin Registration Area the births registered during the week amounted to 182—86 boys and 96 girls; and the deaths to 180—88 males and 92 females.

The deaths, which are 7 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 26·8 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the Area, the rate was 25·5 per 1,000. During the twenty weeks ending with Saturday, May 20, the death-rate averaged 29·4, and was 1·3 under the mean rate for the corresponding portions of the ten years 1889-1898.

Nineteen deaths from zymotic diseases were registered during the week, being one in excess of the average for the corresponding week of the last ten years, and also one over the number for the previous week. They comprise 2 from measles, one from scarlet fever (scarlatina), 11 from influenza and its complications, 3 from whooping-cough, and one from diphtheria.

As in the week preceding 17 cases of scarlatina were admitted to hospital; 9 scarlatina patients were discharged, and 77 remained under treatment on Saturday, May 20, being 8 over the number in hospital on that day week.

The number of cases of enteric fever admitted to hospital was 8, being 3 under the admissions in the preceding week, and 2 under the number for the week ended May 6. Eleven patients were discharged, and 55 remained under treatment on Saturday, May 20,

being 3 under the number in hospital at the close of the preceding week.

Six cases of diphtheria were admitted to hospital, being 4 over the admissions in the preceding week, but one under the number for the week ended May 6th; 8 patients were discharged, one died, and 20 remained under treatment on Saturday, May 20, being 3 under the number in hospital on that day week.

Thirty-six deaths from diseases of the respiratory system were registered, being equal to the number for the preceding week, and 7 over the average for the 20th week of the last ten years. They comprise 21 from bronchitis and 14 from pneumonia.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of May, 1899.

Mean Height of Barometer, -	-	-	30·001 inches.
Maximal Height of Barometer (28th, 1 p.m.),			30·538 „
Minimal Height of Barometer (15th, 8 p.m.),	-	-	29·334 „
Mean Dry-bulb Temperature,	-	-	51·0°.
Mean Wet-bulb Temperature,	-	-	47·5°.
Mean Dew-point Temperature,	-	-	44·0°.
Mean Elastic Force (Tension) of Aqueous Vapour,			·288 inch.
Mean Humidity, -	-	-	78·2 per cent.
Highest Temperature in Shade (on 31st),	-	-	69·6°.
Lowest Temperature in Shade (on 27th),	-	-	38·0°.
Lowest Temperature on Grass (Radiation) (on 6th),	-	-	33·0°.
Mean Amount of Cloud, -	-	-	53·4 per cent.
Rainfall (on 16 days), -	-	-	2·095 inches.
Greatest Daily Rainfall (on 17th), -	-	-	0·358 inch.
General Directions of Wind, -	-	-	N.E., E., W.S.W.

Remarks.

Both at the beginning and at the close fair anticyclonic weather prevailed, calm, cold nights alternating with bright, sunny, and sometimes warm days. During the central fortnight conditions were cyclonic, and the weather was very disturbed, rainy and cold. Rain fell daily from the 11th to the 24th inclusive, the total fall being a little over the average.

In Dublin the arithmetical mean temperature (51·8°) was slightly

below the average (52.0°) ; the mean dry-bulb readings at 9 a.m. and 9 p.m. were 51.0° . In the thirty-four years ending with 1898, May was coldest in 1869 (M. T. = 48.2°), and warmest in 1893 (M. T. = 56.7°). In 1898 the M. T. was 51.2° .

The mean height of the barometer was 30.001 inches, or 0.012 inch above the corrected average value for May—namely, 29.989 inches. The mercury rose to 30.538 inches at 1 p.m. on the 28th, and fell to 29.334 inches at 8 p.m. on the 15th. The observed range of atmospheric pressure was, therefore, 1.204 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 51.0° , or 3.7° above the value for April, 1899, 47.3° . Using the formula, *Mean Temp.* = *Min.* + (*max.*—*min.* $\times .47$), the value was 51.4° , or 0.2° below the average mean temperature for May, calculated in the same way, in the twenty-five years, 1865–89, inclusive (51.6°). The arithmetical mean of the maximal and minimal readings was 51.8° , compared with a twenty-five years' average of 52.0° . On the 31st the thermometer in the screen rose to 69.6° —wind, E. On the 27th the temperature fell to 38.0° —wind, W. The minimum on the grass was 33.0° on the 6th.

The rainfall amounted to 2.095 inches, distributed over 16 days. The average rainfall for May in the twenty-five years, 1865–89, inclusive, was 2.030 inches, and the average number of rainy days was 15.4. The rainfall and the rainy days were thus somewhat above the average. In 1886 the rainfall in May was very large—5.472 inches on 21 days; in 1869, also, 5.414 inches fell on 19 days. On the other hand, in 1895, only .177 inch was measured on but 3 days. In 1896 the fall was only .190 inch on 7 days. In 1898 as much as 3.332 inches fell on 20 days.

A lunar corona was seen on the 20th; solar halos appeared on the 1st, 17th and 29th. High winds were noted on 6 days, but did not attain the force of a gale on any occasion. The atmosphere was slightly foggy on the 10th, 12th, and 29th. Hail fell on the 16th. Thunder was heard on the 15th.

During the month the thermometer did not fall below 32° in the screen or on the grass. The mean minimal temperature on the grass was 40.6° , compared with 42.9° in 1898, 40.9° in 1897, 43.1° in 1896, 41.8° in 1895, 37.6° in 1894, 45.6° in 1893, 41.8° in 1892, 37.7° in 1891, 42.2° in 1890, 42.4° in 1889, and 37.5° in 1888. The maximum exceeded 60° on 10 days, but never fell short of 50° .

The rainfall in Dublin during the five months ending May 31st amounted to 9.652 inches on 87 days, compared with 10.568

inches on 84 days in 1898, 10·693 inches on 93 days in 1897, 5·971 inches on 70 days in 1896, 10·410 inches on 68 days in 1895, 12·709 inches on 90 days in 1894, 7·908 inches on 66 days in 1893, 10·099 inches on 80 days in 1892, only 5·995 inches on 63 days in 1891, and a twenty-five years' average of 10·496 inches on 81·6 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 3·095 inches distributed over 16 days—·555 inch falling on the 17th and ·500 inch on the 13th. The total fall since January 1st, 1899, equals 15·475 inches on 86 days, compared with 12·445 inches on 78 days in 1898, 14·120 inches on 90 days in 1897, 5·716 inches on 52 days in 1896, 12·845 inches on 58 days in 1895, 15·696 inches on 85 days in 1894, and 9·565 inches on 65 days in 1893.

The rainfall at Cloneevin, Killiney, was 2·13 inches on 14 days, ·36 inch being measured on the 17th. The average rainfall in May at this station during the 14 years 1885-1898, inclusive, was 2·063 inches on 13·4 days. Since January 1st, 1899, 11·15 inches of rain have fallen at Cloneevin on 79 days. This compares with a 14 years' average of 9·685 inches on 71·8 days.

At the National Hospital for Consumption Newcastle, Co. Wicklow, the rainfall in May was 2·240 inches on 16 days, compared with 3·251 inches on 19 days in 1898, and 0·802 inch on 11 days in 1897. The maximal fall in 24 hours was ·550 inch on the 17th. Since January 1, 14·891 inches of rain have fallen at this station on 83 days, compared with 12·459 inches on 74 days in the corresponding 5 months of 1898. The maximum shade temperature was 67·7° on the 30th, the minimum was 36·5° on the 6th, 15th and 27th.

PERISCOPE.

THE MICROBE AND THE APPLE TART.

MR. G. CLARKE NUTTALL, B.Sc., in the June number of *Knowledge*, selects for his theme the change of colour from white to reddish, and then a dirty brown, which cut apples undergo as they lie piled up in slices in the dish waiting for their covering of paste—a change of colour forming a Gordian knot which many have attempted in vain to untie, and which even yet is not altogether free. “The latest and most thorough explanation is one lately put forward by a chemist named Lindet. . . . Within the cells of the tissues which make up the fleshy part of the apple—the part that is eaten—there is produced in their jelly-like contents a certain product to which the name malase or laccase has been variously given; and this product belongs to a curious class of substances known as enzymes. . . .

Now, an enzyme is a production of the activity of the cell which has the unique power of influencing other substances in its neighbourhood, and yet remaining unaltered in any way itself. It can exert influence without apparently being affected by doing so. Its own constitution is stable, but it possesses power to act, even at a distance, on certain of its surroundings, and produce great effects on the constitution of other matter, in some way not yet thoroughly comprehended."

ELEMENTARY CHEMISTRY.

THE *Lancet* (May 20, 1899) says that at a recent meeting of the Chemical Society Professor Harold B. Dixon detailed the results of some simple experiments, and they proved interesting. Thus, in dealing with the combustion of carbon disulphide he found that the vapour undergoes a phosphorescent combustion in air similar to that of phosphorus and sulphur. In the combustion of carbon disulphide, in spite of the presence of an excess of oxygen, small quantities of unaltered carbon disulphide as well as oxysulphide and monoxide of carbon remain. In another paper Professor Dixon showed that in the combustion of carbon it is not strictly true that the formation of carbon dioxide is due to a single and direct action between carbon and oxygen. It has been accepted that carbon monoxide is only formed by a secondary action between carbon dioxide and carbon. On the other hand, experiments would seem to make it very probable that in the combustion of carbon the incomplete product carbon monoxide is first formed. This should throw some light on the conditions ensuring the perfect combustion of coal and coal gas, and thus directly affect the question of smoke abatement. It is now well known, further, that in the products of the spontaneous oxidation of coal at ordinary temperatures deadly carbon monoxide occurs which would injuriously affect the health of miners.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Hydrochloride of Heroin.

"HEROIN" was introduced by Messrs. Friedr. Bayer & Co., of Elberfeld, Prussia, in the autumn of last year, as a sedative in affections of the air-passages. An account of the drug will be found in the number of this Journal for February, 1899 (Vol. CVII., p. 160). The wish for a neutral heroin salt, easily soluble in water, and suitable for subcutaneous injection, has been frequently expressed. This desire on the part of physicians the firm of Messrs. Bayer have complied with by introducing the hydrochloric acid salt of heroin, under the name of "Hydrochloride of Heroin."

Hydrochloride of heroin is a white crystalline powder, melting point 230° – 231° , easily soluble in water (1–1.7), and also easily soluble in alcohol. The aqueous solution is of neutral reaction, and gives no reaction with perchloride of iron. The dose for subcutaneous injection is the same as that of heroin itself—viz., one-twelfth to one-sixth of a grain. It is advisable, however, in the case of a first injection to reduce these doses by one-half—viz., one-twenty-fourth to one-twelfth of a grain.

“Tabloid” Effervescent Medicines.

MESSRS. BURROUGHS, WELLCOME & Co. have submitted to us specimen tubes of “tabloid” caffein citrate effervescent, B.P., gr. 60, and “tabloid” effervescent sodium sulphate, gr. 60. These preparations are typical of the new series of “tabloid” effervescent preparations which the firm have introduced, and which includes:—“Tabloid” caffein citrate effervescent, B.P., gr. 60; “tabloid” lithium bitartrate (effervescent), gr. 5; “tabloid” lithium citrate effervescent, B.P., gr. 60; “tabloid” lithium citrate (effervescent), gr. 4; “tabloid” magnesium citrate (true, effervescent), gr. 60; “tabloid” magnesium sulphate effervescent, B.P., gr. 60; “tabloid” magnesium sulphate compound (effervescent); “tabloid” piperazin (effervescent), gr. 5; “tabloid” potassium citrate (effervescent), gr. 15; “tabloid” sodium phosphate effervescent, B.P., gr. 60; “tabloid” sodium salicylate (effervescent), gr. 5; “tabloid” sodium sulphate effervescent, B.P., gr. 60. In comparison with ordinary granular effervescing preparations the effervescent “tabloids” are wonderfully compact, portable, and convenient, whilst they offer a much smaller surface for deterioration by damp or exposure. They achieve an accuracy in dosage impossible with loose granular preparations, and this exactness is independent of weighing or measuring of any kind on the part of the patient. In water they produce effervescing draughts of the various drugs at the moment they are required. The purity of their constituents is of that high standard characteristic of all “tabloid” drugs. The specimens which we have received are as follows:—“Tabloid” caffein citrate effervescent, B.P., gr. 60 (3.89 gm.). This preparation represents the effervescent caffein citrate of the B.P., 1898, and contains two grains of caffein citrate in each drachm. One or two may be added to half a tumbler of water. “Tabloid” sodium sulphate effervescent, B.P., gr. 60 (3.89 gm.), represents the official preparation. This last is a useful and convenient form for the regular administration of sodium sulphate in constipation associated with gouty and hepatic disorders.

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MEDICAL SCIENCE.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. V.—*Diphtheria. Analysis of One Hundred Cases.*
By JOHN MARSHALL DAY, M.D. Univ. Dublin; Resident Medical Officer, Cork-street Fever Hospital.

DURING the year 1898-9 we admitted into Cork-street Hospital one hundred cases of diphtheria, amongst whom the death-rate was 18 per cent. This is the largest number of admissions and the lowest death-rate recorded in any year. Of these cases we find 63 were females and 37 males.

The greater proportion of cases of diphtheria are under ten years of age, sixty-six per cent. of the cases being under that age, and for that reason we will lay most stress on the diagnosis in young persons.

We may lay down as a rule, first, that nearly all cases of diphtheria, excluding wound diphtheria, are primarily tonsillitic, and by extension invade the larynx and nasal tract.

In diagnosing diphtheria in children, four kinds of sore throat must be kept in mind, viz.:—Scarlatinal, rheumatic, diphtheritic, and septic, due to pus in the oral cavity, as aphthæ, &c.

The term membranous sore throat is now used only as a loop-hole of escape for the over-cautious.

Scarlatina without a rash is not a disease of childhood. If the throat symptoms be severe the rash is present in propor-

tion, and well-marked, or there will be the diagnostic brown-ing at the flexures and red spots on the extremities, and characteristic tongue. When the two diseases co-exist the diphtheria nearly always takes on a nasal type in addition to the formation of membrane on the tonsils. Also one generally notices that in scarlatina the child looks heavier and collapses much earlier than in diphtheria. One must always bear in mind that the two diseases may co-exist, and when the throat symptoms are suspicious make a bacteriological examination.

Rheumatic sore throat is nearly always accompanied by pains in the muscles of the neck or vague pains in the body, sweating skin, redness of palate, pharynx and tonsils, deep injection in spots, and often a rheumatic history and a rheumatic purpura.

There is, I believe, greater difficulty in diagnosing pyæmic throat from diphtheria, as it often presents very similar appearances; swabbing is the only true guide.

In the sore throat which arises from constipation the appearances are different. They are more like those of follicular tonsillitis—one has not the enlarged glands, but a foul, coated tongue, soft sweating skin, and fæcal breath; and the patient is far more oppressed than is usual in diphtheria in the early stage.

The diagnosis of diphtheria is made by the presence of membrane, enlarged glands under the angle of the jaw, temperature most frequently raised, but sometimes sub-normal or normal; a peculiar and very characteristic foætor often present, frequently with well-defined patches of greyish or whitish hue on the tonsils, and often in the soft palate; these may be so large as to simulate a mushroom and completely hide the back of the throat. These patches are more or less adherent, will not come away with a cotton wool swab, or if removed leave a bleeding surface; or the membrane will be a soft pultaceous looking matter, darker in colour and more offensive. Sometimes one may see round holes dug out with jagged, sloughing edges, easily distinguished from the empty abscess cavity, or an irregular ulcerated surface with greyish purulent matter adhering; sometimes one can see only congealed blood and sloughing throat with intense foætor. This is a very fatal form; therefore, one

may conclude that, when a child suffers from a sore throat with membrane which will not wipe off easily, or ragged ulceration with foetor, enlarged glands, especially if accompanied by nasal discharge, and husky voice, one should bear diphtheria in mind, and, failing to put it under any other heading, treat it as diphtheria, and inject at once and swab (before applying anything else to the throat), so as to confirm the diagnosis. Injections do not cost much, are not painful, do not require the services of a surgeon, and may in an emergency be administered with an ordinary hypodermic needle, and so far as our present knowledge goes, are free from any injurious effects even when the case proves not to be diphtheria.

If the patient has been in contact with infected persons, the throat may be simply red, though not much swollen, and no membrane visible. This absence of membrane has not been noticed in children (cases with a large quantity of membrane often do very well, and the converse also holds). One cannot base a prognosis on the quantity of membrane, but finds where the membrane is well defined and raised the cases do well, also when the temperature is over 101° on the second or third day the prognosis is mostly favourable. What strikes one most about the disease is its insidious nature, and the frequency with which it is present in the throat without the patient making any complaint.

As is seen in scarlatina often when the throat is much engaged the patient swallows well, the membrane or secretion acting like a glove and deadening sensation.

The first symptoms of diphtheria in a child are generally vomiting, headache, lassitude, and sometimes pains in the bones. On examination one notices the enlarged glands under the angle of the jaw, the tired facial expression, and a peculiar foetor from the breath, which is diagnostic, as is the foetor of typhus. The tongue as a rule is very dirty. There is more or less membrane on the tonsils, palate and pharynx, which presents the various appearances described above.

Prognosis—The earlier a case comes under treatment the better the prognosis. When we analyse the 100 cases we find 48 entered as having been only one or two days ill. Of these six died—death-rate 12.50. Four died of laryngeal

symptoms within ten hours of admission, two had nasal discharge and died on the fourteenth day. I think we are correct in assuming that these cases were longer ill than stated—*i.e.*, that the membrane had been present on the throat for several days before the larynx and nostrils became engaged. Nineteen were three days ill. Of these five died, showing a death-rate of 26 per cent. Four died on the seventh, and one on the fourteenth day. Twelve were suffering from scarlatina, of whom four died, showing a death-rate of 33·3 per cent.

The cases under treatment varied greatly in severity at different periods. Sometimes there would be a run of severe cases, and sometimes of slight, so that prognosis could, to a certain extent, be based on the prevailing type.

We can classify diphtheria into tonsillitic, nasal, and laryngeal. There were 67 of the first class with two deaths, 27 nasal with ten deaths, and 16 with laryngeal symptoms, with six deaths.

One may lay down the axiom that the earlier the nasal discharge appears and the more foetid it is, the worse the prognosis; one also finds that in scarlatina the nasal type is most common at the early stage, and the laryngeal type in the convalescent stage.

The insidious nature of the disease is one of its most dangerous characteristics—for instance, a woman brought in an infant early one morning which had died on the way to hospital, and the history she gave was that it “got bad with its breathing in the middle of the night.” Examination showed that it was a case of diphtheria probably of several days’ duration, and on questioning her about the other children she stated that they were quite well, and going to school, but we found on examination that the mother and two children were suffering from diphtheria, the children eventually recovering after a very severe attack.

I have seen a child playing about the garden, and, on examination, found his throat covered with membrane.

The period of dying is distinctive. Most of the cases die on the 7th, 14th, or 21st day of illness. Some die quickly of the intensity of the poison, with all the symptoms of intense blood destruction, evidenced by hæmorrhagic purpura, diarrhœa, vomiting, collapse, with putrid nasal discharge;

some of laryngeal obstruction and pneumonia; some of cardiac failure; and lastly, of prolonged fever, diarrhoea, and exhaustion. One may see grave cardiac paralysis come on about ten days after very slight throat symptoms.

The treatment we have found most successful is, the injection of 750 to 1,000 units of antitoxin into the thigh or behind the shoulder with simple antiseptic precautions (when we injected into the abdominal walls we found that diarrhoea ensued in several cases). This may be repeated next day, but we have not found it of much avail in severe cases where the nasal trouble has been long present. Much larger doses are sometimes given, but I think it is of greater importance to get a reliable antitoxin, and give calomel, grains 1 or 2 every hour or two hours until the bowels be well moved. This seems to me to be of particular benefit in laryngeal cases. Dry the throat with cotton wool, and apply Loeffler's solution to the parts, holding the swab for a minute, if possible against the membrane; spray the throat frequently with paroleine in which 10 grains each of salol and menthol have been dissolved. If there be much tonsillitic swelling we sometimes apply poultices to the neck, bringing them up above the ears, we use internally a mixture of liq. ferri hydrochlori. and quinine, in doses suitable to the age of the patient. For the nasal discharge we use warm solution of carbolic acid, one in 40, with bread soda, 60 grains to the 6 ounces as a douche. With older patients if they complain of pain in swallowing, a Nelson's inhaler with carbolic acid solution is used. We seldom order stimulants in the early stages, as alcohol vitiates the action of antitoxin, and there is no need as a rule. No case developed laryngeal symptoms after admission, and only one died of cardiac failure, a girl aged 7 years, on the fourteenth day of a severe attack with nasal discharge.

We have nothing special to report in reference to the kidneys, as none of the cases developed nephritis.

Eight convalescents had paralytic symptoms which called for special treatment, several others showed slight transient paralysis of the palate or eye muscles.

The length of time the throat may remain infecticus after an attack is very variable. We never discharge a patient until all redness has disappeared, and when after rest for

twenty-four hours from all treatment, the swab gives a negative culture. We have found in one case the bacilli present a month after all membrane had disappeared, and in another which had slight redness of the throat five weeks later. Of course we do not consider a case safe till the mucous membrane of the nostrils is normal: in two cases the membrane reappeared; in one on the 19th and in the other on the 14th day after injection of 750 units.

In the Metropolitan Asylum Board's Report, we find that diphtheria is most prevalent in the winter months. With us most of the cases were admitted in July and August, and September and October. We also find that their death-rate is 20·9 per cent. with serum treatment, which accords with ours of 18 per cent.

On looking back over the cases there is not one in which we regret having withheld operative interference, as those cases classified as laryngeal which died, did not die as a rule of dyspnoea, and all its accompanying distress, but of diarrhoea and pneumonia, and in some cases so soon after admission that interference was not possible.

As regards operation, the ideal cases would be where the laryngeal symptoms supervene after the child has come under treatment. In such cases the rule to follow is, so long as the patient sleeps it is best to wait, but if the patient becomes restless, or is becoming comatose, operate at once. I believe in several cases the laryngeal symptoms were due not to membrane but to swelling of the vocal cords, with a certain amount of spasm, which generally passes off without operation.

Unfortunately our statistics of operation cases show bad results. Of the two cases in which we operated immediately after admission, one died in the night suddenly from obstruction of the tube, and the other slowly from extension of the membrane down to and below the bifurcation of the trachea. In such cases one can only promise to give relief and produce a condition of euthanasia, but naturally the prognosis is very grave.

Since writing the above we have had a successful case after tracheotomy, which was done eighteen hours after the patient's admission, a child aged two years. In this case the patient was becoming rapidly comatose.

ART. VI.—*Some Theoretical and Practical Remarks on the Hot Air Bath.* By DR. M. ALTDORFER, Wiesbaden; late Resident Physician at St. Ann's Hill Hydropathic Establishment, Cork.

DURING the time of my connection with St. Ann's Hill Hydropathic Establishment, Cork, it has often astonished me that the views of the medical profession with regard to the value of the hot air or Turkish bath should vary so very much, as they do. Some physicians, it is true, are very enthusiastic about this method of treatment, and recommend it freely to their patients; but, on the other hand, there are a number of practitioners who are still prejudiced against it, and consider it their duty to warn everybody of the dangers lurking behind the walls of this bath. Now, as I have been living for over twelve years under the most favourable conditions for watching the action of the hot air bath at close quarters, mixing freely with the patients in the bath, and having them under my observation during the whole day, perhaps the conclusions arrived at under these circumstances may be of some general interest.

St. Ann's Hill, the birthplace of the Turkish bath as used at present, is frequented by a good many persons who have been devoted to the bath since its introduction into Western Europe, and, consequently, the atmosphere is charged with an enthusiasm not found anywhere else. You meet there people who will tell you in all seriousness that as long as you only stick to your Turkish bath you may live just as you please—you may eat and drink what you like, wear whatever you wish, expose yourself to colds, draughts, or any kind of infection; in fact, you may break every known hygienic law with impunity. The bath is sure to protect you from every harm. Now, although we need not go so far as these enthusiasts, there still remains a good deal to be said for the therapeutical value of the hot air bath, which we shall understand better when we see how close an imitation the bath is of the means which nature herself employs in dealing with disease.

Recent researches have shown, on the one hand, that in bacterial diseases the noxious element is not so much the micro-organisms themselves as their metabolic products, the "toxins," and, on the other, that the morbid symptoms in a great many other pathological conditions are due to the presence of certain animal alkaloids in the blood, produced within the body through faulty action of the cells, which have been called by Gautier "leucomains," and are now generally known as "autotoxins" (Brieger and Fraenkel). The accumulation of these deleterious substances is held to be the direct cause of the "constitutional" diseases, of which rheumatism, gout, diabetes and anæmia are representatives, as well as of a great many "functional" diseases of the nervous system, such as neurasthenia, Graves' disease, Addison's disease, and certain mental affections, in which autotoxins have been elaborated through morbid metabolism of the nerve cells. Moreover, the autotoxins are indirectly harmful, since they weaken the power of resistance of the body, and cause the "disposition" to infective diseases by preparing a suitable soil for the growing of the bacilli and the development of their products, the toxins. Now, as we know that these organic bases—toxins as well as autotoxins—are soluble in the blood, which is proved by the fact that they are found in the urine and that they are highly oxidisable,* the most rational therapeutics in these pathological conditions would be to destroy these deleterious substances by endeavouring to increase the physiological eliminations and oxidations within the body. In this we should only follow the ways of nature, who works by such means with regard to prevention as well as to cure. Gautier holds that poisonous alkaloids are continuously being formed in healthy men and animals by the metabolism which occurs during the functional activities of life, but that there are two physiological modes or vital mechanisms constantly at work in our bodies to protect us against auto-infection—viz., "I., the elimination of the toxic products as excretions by the various emunctories—the liver, the kidneys, the skin,

* Dr. A. M. Brown: "Treatise on Animal Alkaloids." London. 1887. Preface by Gautier. P. 28.

the lungs, and the intestinal mucous membranes; II., the destruction of the toxic products by oxygenation, which consists in a continuous combustion of the leucomains by the oxygen of the blood, in which they are burned or consumed in its current, or partially in the tissues and organs."^a These physiological processes are quite sufficient in a normal state of health, but when owing to some pathological conditions an accumulation of toxins or autotoxins has taken place, then it becomes necessary that all the vital functions, more especially the eliminations and the oxidations, should be roused to greater activity in defence of the organism. A more thorough elimination will be effected either by copious discharges of the bowels, or by profuse perspiration and increased action of the kidneys. In the stools of typhoid fever, and in the urines of patients suffering from typhoid and pneumonia, the presence of alkaloids has been detected by Séquin, Guérin, Lauder Brunton and others, and with regard to perspiration Prof. Queirolo, of Genoa,^b has made some interesting experiments. He injected into rabbits the sweat of patients suffering from various fevers—such as small-pox, malaria, rheumatic fever—and checked the results obtained by other experiments, in which the perspiration of healthy persons was used. He eventually found that all the animals which had received a sufficient dose of the sweat of fever patients died after from two to forty-eight hours, whilst the animals into which the same or even a larger quantity of the healthy perspiration had been injected were in no way affected. The results of these experiments have been corroborated by Ziegelroth and others, who have also discovered bacilli in pathological perspirations. As to oxidations, it has often been proved experimentally that during the pathological storm which we call "fever" the processes of oxidation within the body are considerably increased, the excretion of CO_2 being raised by from 70 to 80 per cent. Finkler^c has ascertained that in guinea-pigs not only the excretion of CO_2 , but also the absorption of

^a Sir W. Aitken: "On the Animal Alkaloids." London. 1887. P. 18.

^b Brit. Med. Journal. 7 July, 1888.

^c Finkler: "Ueber das Fieber." Pflueger's Archiv., vol. XXIX.

O into the blood, was augmented during fever by from 10 to 16 per cent., and Kraus^a has found that the absorption of O in men was increased by 20 per cent. during acute feverish diseases. At the same time the view that high temperatures in themselves are not only not necessarily injurious—the well-known “aseptic” fever of Volckmann being a case in point—but that they even have a beneficial effect, is gaining ground more and more. Loewy and Richter^b have shown that the resistance of rabbits to the virus of pneumonia, diphtheria and hog cholera is greatly increased if before inoculating with the virus the temperature be raised by injuring the corpus striatum, and Kast,^c who has experimented with the bacilli of typhoid fever on rabbits, has arrived at similar conclusions. With regard to the effect of fever on the human constitution, it has been observed that, if a diabetic is attacked with fever—for example typhoid—sugar may temporarily disappear from the urine, the excess of sugar in the system being presumably burnt off, and H. Campbell^d has published a series of cases in which febrile disorders have had a curative effect on other maladies, such as rheumatism, dyspepsia, anæmia, rhinoscleroma, and mental diseases.

In addition to increased eliminations and oxidations I must mention another means of defence employed by the organism, which has been studied more closely of late—viz., leucocytosis, which is always found to be present in acute febrile diseases (Riegel and Bockmann^e). It is presumed by Brieger, Kitasato, and others, that the leucocytes play a prominent part in destroying the toxins in the body by forming antitoxins, and this view is borne out by clinical observations which show that diseases with a pronounced leucocytosis take a more favourable course than those in which this symptom is wanting. Experimentally the very striking fact has been discovered

^a Landois : “Physiologie.” 1896. P. 427.

^b Deutsche med. Wochenschrift. 1895. No. 15.

^c Verhandlungen des Congresses f. innere Medicin. 1896.

^d Brit. Med. Journal. April 30, 1898.

^e Landois, loc. cit., p. 35.

by Loewy and Richter^a that animals in which by injection of spermin an artificial leucocytosis had been produced could stand with impunity from three to four times the dose of the virus of pneumonia, which would have been fatal under ordinary circumstances. All these observations certainly seem to support the old theory that fever is a defensive mechanism of the body, a determined effort on the part of the constitution to overcome the disease.

Now, if we look about us for a means of imitating the ways of nature in her struggle with disease, we shall not be able to find anything better than the hot air bath. The beneficial action of this bath in removing effete and noxious substances, and even micro-organisms from the blood through the free perspiration it produces has been known for a long time, and in addition to this its *physical* effects have been dwelt upon by observers like Frey and Heiligenthal,^b Coley, and others, in particular, the temporary dilatation of the small blood vessels of the surface of the body by which the blood pressure is altered, the work of the heart relieved, the circulation quickened, congestion of internal organs removed, and the general tissue change promoted. In a paper published in 1888^c I have myself drawn attention to the *chemical* action of the different processes which make up a Turkish bath, more especially to the effect on the gas exchange—the excretion of CO₂ and absorption of O by the human body. I have pointed out that, whereas under ordinary circumstances the respiratory activity of the skin is very slight, it has been proved that the excretion of CO₂ is increased by raising the surrounding temperature, “in fact it may be doubled” (Landois). In the hot room of the Turkish bath, when a great amount of blood is circulating in the widely dilated cutaneous blood vessels, when after the desquamation of the superficial epithelial layers the partition between air and blood is

^a Loewy and Richter: “Ueber den Einfluss von Fieber and Leucocytose auf den Verlauf von Infections-krankheiten.” Deutsche med. Wochenschrift. 11 April, 1895.

^b Frey and Heiligenthal: “Die heissen Luft und Dampfbæder.” Leipzig, 1887.

^c The Hot Air Bath in Relation to Ptomain and Leucomains. Medical Press. May, 1888.

very thin, when the skin is covered with perspiration—the gas exchange through this organ must be greatly facilitated, the endosmosis of oxygen highly favoured. The bather is, therefore, somewhat in a similar position to animals with a thin, moist epidermis, and it is a well-established fact that in frogs the exchange of gas through the skin is so great that this organ may partly replace the lungs functionally, from two-thirds to three-fourths of all the excreted CO_2 being yielded by the skin (Landois). In the following stage of the bath, when the exposure of the body to hot air is followed by the external application of cold water in the form of a plunge bath or douche, the gas exchange and the interstitial oxidations are even more powerfully influenced. Landois, speaking of warm-blooded animals, states that, “as the cold of the surrounding medium increases, the processes of oxidation within the body are increased through some as yet unknown reflex mechanism. On passing suddenly from a warm to a cold medium the amount of CO_2 and the absorption of O is considerably augmented,” as Finkler has proved by experiments on rabbits. It has always to be borne in mind that excretion of CO_2 is the primary process in the gas exchange, and that only by promoting the intercellular oxidations and the excretion of CO_2 we can increase the absorption of O, which is dependent on, if not parallel to, the former process. Winternitz has always emphasised the fact that by such thermal stimuli as we use in hydrotherapeutics we are enabled to powerfully influence the intercellular oxidations, and even the morphological composition of the blood. According to this authority the effect of cold water applications is not only a considerable increase in the excretion of CO_2 and absorption of O, but also a greater alkalinity of the blood, and a very remarkable *leucocytosis*, the apparent increase of the white corpuscles being probably due to a stirring up and a better distribution through the general circulation of those cellular elements which have been stagnant in such places as spleen and spinal cord.* We always finish the process of bathing in the cooling room by resting for some time in a cool

* Winternitz and Strasser: “Hydrotherapie.” Berlin. 1898. P. 72.

atmosphere, and here the stimulus given to intercellular oxidations and absorption of oxygen is still kept up. "In animals with the temperature of the surroundings at 46° F. the CO₂ given off was one-third greater than with the temperature at 100.4° F." (Landois).

If in addition to the above considerations we think of the fact that the blood after the great loss of fluid is more concentrated and, therefore, allows the blood corpuscles charged with oxygen to come into closer contact with the microbes, and that by the moderately-raised temperature of the blood the cells, especially the phagocytes, are roused to greater activity, it seems evident that by resorting to the use of the hot air bath we have it in our power to give a valuable assistance to the cells of the body in their struggle with microbes, toxins, autotoxins, and other enemies. *We are, in fact, working on the lines of real cellular therapeutics.* In another paper* I have pointed out the striking similarity between the effects of fever and of the hot air bath on the human organism. In both conditions we find *increase of temperature, up to 101° and 102° F., of pulse, respiration, excretion of urea and uric acid, alkalinity of the blood, excretion of CO₂, absorption of O, and of general leucocytosis.* Now, if we observe that acute diseases accompanied by fever generally take a rapid course, whilst the chronic ailments are most frequently very lingering, we should be glad to have at our disposal a means of imitating the action of fever in a manner perfectly harmless for the constitution, which has this advantage over the artificial fevers caused by injection of erysipelas virus (as recommended by Emmerich and others), that we can interrupt the process at any time and bring the body back to normal conditions, and that no consumption of the tissues is caused by it.

All these theoretical reflections must lead to certain practical consequences with regard to the working of the Turkish bath. If we consider the gas exchange and the processes of interstitial oxidations of such importance in the therapeutical action of the bath, it follows, as a matter of

* "Heilieber und Heissluftbad, ein Vergleich." Deutsche Med. Ztg. 1888. Nos. 76, 77.

course, that, in the first place, we have to pay special attention to an abundant supply of pure air and fresh oxygen. On this account it is desirable that the Turkish bath should be situated in a locality where abundance of ozone and no pollution of the air by organic substances is to be found, if possible in the country. Free access of oxygen to the bather being of the utmost importance the ventilation of the different chambers of the bath should be well looked after, and in connection with the question of ventilation I should like to emphasise the necessity that in the hot room the ventilators or foul air conduits should be placed *at the floor level*, for the air becomes laden with carbonic acid and other poisonous exhalations from the lungs of the bathers, and as the normal temperature of the body rises but a few points in the hot chamber these exhalations in addition to being heavier than air are very much below the average temperature of the sudatory chamber, consequently they fall and must be extracted at the floor level. Since we know that effete matters, particles of waste tissue and possibly even the germs of disease, are continually being given off by the perspiring bathers, which must be prevented from finding a lodgment, it follows that the employment of *porous and absorbent materials* should be guarded against throughout the sudatory chambers. For this reason I prefer the old-fashioned wooden clogs for the feet to the soft carpet in these rooms. With regard to the plunge bath or douche I hold that the application of water in this form should be of *short* duration but as cold as can be borne, except in cases in which special caution is indicated on account of some constitutional weakness. Experience has shown that the more intense the thermal stimulus, which means the greater the difference in the temperatures of the media employed, the more lively the oxidations within the body will be by reflex action. The cooling room ought to be really *cool* and not warm as is very often the case. Cool air, in addition to stimulating general metabolism, has the advantage that it restores the tone of the skin much quicker than warm air, which means saving of time and a more buoyant feeling of health after the bath. If, as we have seen above, the

increase in the gas exchange through the skin and lungs, started in the first two stages of the bath, is continued in the cooling room it must be a great mistake to wrap the body in sheets or blankets as the process of breathing through the skin can be best facilitated by exposing the uncovered body as much as possible to the surrounding air, and vitiating the air of this room by tobacco smoke becomes, of course, from a hygienic point of view, a sheer absurdity.

All these observations go to show that we have in the hot air bath a very important curative agent, but if we wish to get the full value out of it—that is, if by its use we want to counteract efficiently the formation of a virus or the development of a bacillus in the body—the bath should be taken much more frequently than is usually done. As a luxury it may be taken once a week, but for therapeutical purposes this is not sufficient, at least two baths daily ought to be the rule. The fear that this would be “lowering” to the constitution is quite groundless. I have had ample opportunity of observing the good results of two or even three Turkish baths daily, which are not weakening because the perspiration set up by *heat applied from without* causes no wasting. (It is, of course, very different in the case of the spontaneous sweating of the consumptive, when the *lost heat* has to be supplied from within.) The chief use of these baths in the training of athletes, jockeys, &c., consists in the beneficial effect they have on the relief of muscular fatigue by removing the waste products of the muscles’ own activity and by supplying them with fresh oxygen, not in keeping the weight down. Other things being equal a course of Turkish baths rather tends to a *gain in weight* than to a loss, the appetite being improved and the digestion as well as the assimilation of food greatly promoted. An increase of two pounds per week is quite a usual occurrence, and I have known people who took two baths daily to put on as much as five pounds in a week. To reduce a person by Turkish baths only is much more difficult, and it can only be done by modifying the process of bathing in such a way that heat is only employed for a short time and that

liberal use is made of *cold* water applications by repeated and prolonged douches or plunge baths, the loss of heat being made good by the burning up of the superfluous adipose tissue.

From my own observations I am bound to say that I consider the hot air bath a greater boon to the feeble and delicate than for the strong and robust, who by all kinds of bodily exercise are able to occasionally raise the temperature of their bodies and to stimulate all the vital functions of the different organs. The vicarious relation in which this bath stands to exercise gives it a value hardly to be exaggerated in the management of such cases as, whether through simple lack of strength or the disablements of disease, have become incapacitated from complying with a condition of health so fundamental and far-reaching as physical exercise, and it has the additional recommendation that it can be resorted to at all seasons and under all climatological conditions. Over the customary cold tub it has this advantage—that by the heating of the body before the application of cold water the necessary reaction is secured, and that thus even those people are enabled to use cold water who otherwise would be deprived of the benefit of this bracing element.

Taken all in all, I am strongly of opinion that the hot air bath is one of the best “tonics” known on account of its action on blood and nerves, and that, consequently, not only is the use of it in health very advisable to give the cells of the body a real training which will stand them in good stead in the hour of battle, but that it also should be freely resorted to in debilitating diseases. I for one cannot agree with some high authorities who deprecate its use in rheumatoid arthritis, for, although I am perfectly well aware that rheumatoid or osteo-arthritis is an incurable disease, the relief obtained in such cases is considerable, and I have known patients of this class to come to St. Ann’s Hill year after year in the firm belief that only by means of the Turkish baths were they able to keep their ailment within bounds and to prevent its progressing.

With regard to the therapeutical indications I need not say much of the use of the hot air bath in gouty and rheu-

matic affections or other conditions caused by deficient oxidations and auto-intoxications, such as diabetes, anæmia, obesity, &c., as the good effect in such cases is well known and generally admitted. But I should like to point out some morbid conditions in which the beneficial action of the bath has not yet received the general attention it undoubtedly deserves.

The first disease I would mention is *tuberculosis*. After the excellent results I have met with in consumptive patients I am fully convinced that the hot-air bath is the most powerful remedy at our disposal in the *incipient stage* of phthisis, and that it very often will turn the scale in favour of the organism in the struggle for existence between the cells and the invading bacilli by mobilising, as it were, a greater number of leucocytes ("calling out the reserves"), stimulating all the cells and destroying the toxins produced by the bacilli. We generally find that the application of our baths in such cases is followed by increased appetite, gain in weight, ceasing of night perspirations, and improvement of general health as well as of local symptoms, that, in fact, the progress of the disease has been completely arrested. In the paper mentioned above I have described some cases with very satisfactory results.

Another class of diseases very favourably influenced by these baths are the *nervous disorders*, more especially the general neuroses, such as neurasthenia, &c. In these cases it is to be presumed that on the one hand the stimulation of the cutaneous nerves by the thermal applications reacts on the nerve-centres, rousing them to healthful energy, and that on the other the toxins elaborated through the faulty metabolism in the nervous system are removed from the blood by the increased eliminations and oxidations. Even in the treatment of mental diseases the Turkish baths are highly spoken of. T. S. Clouston says in his "Clinical Lectures on Mental Diseases," in the chapter on mental depression, "baths are most useful, especially Turkish baths. I have seen many chronic melancholics much improved, and some cured by a course of Turkish baths." In such cases, however, no cold douche should be applied

to the head, as the following reaction would be very risky for the patient. If there are any signs of congestion of the head, putting the feet in cold water for a minute or so is the best remedy.

The mere mechanical action of the hot air bath has a favourable influence in diseases of the *heart and circulation*—diseases in which the use of this bath has been vigorously forbidden by some authorities. I, myself, however, must concur in the view expressed by Dr. Frey, of Baden-Baden, that the condition of the heart and circulation is always improved by a judicious use of the bath, and this is not surprising if we reflect how much the work of the heart must be lightened by the general dilatation of the capillaries in the skin, and the consequent lowering of the blood-pressure. Of course the precaution must be taken not to throw cold water suddenly on the bather, as this abrupt contrast in the temperature would put a strain on the heart which might be too great for a weak organ, but to cool the body by gradually reducing the temperature of the douches or shower baths.

That in the dilatation of the vessels of the surface of the body we have a means of lessening pain depending on congestion of internal organs, and of preventing congestion from going to inflammation, must be evident to everybody. The strikingly beneficial action of the hot air bath in cases of *cholelithiasis* has become more intelligible since the publication of the researches of Kowalski,* who has found by experiments on dogs that thermal stimuli of a short duration and of a low temperature favour the removal of bile from the body, and that high temperatures stimulate the functional activity of the liver, and increase the amount of bile which it forms. Both conditions being present in the hot chamber and the cold douche, the hot air bath must act as a choleagogue as well as a hepatic stimulant.

I have referred already to the better absorption and assimilation of food, but it seems that in a similar way the *absorption and assimilation of certain drugs* which we wish to

* "Ueber den Einfluss von äusseren hydrotherapeutischen Proceduren auf die Gallensecretion." *Blätter f. klin. Hydrotherapie.* 1898. No. 11.

incorporate into the system is greatly promoted. That mercury acts more potently in syphilis in conjunction with Turkish baths has been stated by many authorities, amongst others by Prof. Neisser, of Breslau; and as to other drugs I have myself very often observed that these baths intensify the action of iron in chlorosis. Some milder cases will be cured by Turkish baths without iron, but in the severer forms of the disease the therapeutical action of the baths alone is not sufficient. I remember the very striking case of a young lady who had taken iron in different forms off and on during a period of six years without being able to get rid of the chlorosis she suffered from. A course of Turkish baths improved her condition somewhat, but the real cure was effected only by resorting to Blaud's Pills again, the iron acting almost like a charm after the constitution had been prepared by the baths for the better absorption and assimilation of the drug. I may add that this lady has been quite well now for over four years, and that I have seen several similar cases since.

It has not been my intention to deal at all exhaustively with the therapeutics of the hot air bath; I have only mentioned some of those indications for its use which are not, as a rule, found in treatises on this bath, but I think that enough has been said to prove that this method of treatment deserves the closest attention of the medical world.

ART. VII.—*Note on Verruca or "Warts."* By H. S. PURDON, M.D.; Consulting Physician, Belfast Hospital for Skin Diseases, &c.

It may seem unnecessary to make any remarks on so well-known and trivial an affection of the skin as warts. However, those—especially young ladies—who suffer from these growths do not think lightly of their cutaneous trouble, or that their presence is an ornament to the hands or fingers, and are only too ready and glad to be free from these little out-growths of skin. Globular in appearance; seldom exceeding a line or two in breadth or elevation; an undesirable addition on any exposed part consisting of hypertrophied papillæ, the central

portion of which is penetrated by a single vascular loop ; hence when the wart is cut or irritated it bleeds readily, and the blood from same is said by many lay people to propagate others. The hardness to touch of a wart is due to the horny tissue of the epiderma, whilst the redness observed in some depends on the increased vascularity of their bases. Warts occur more frequently in children and young persons. In adults they are usually met with on the scalp, often associated with seborrhœa and slight loss of hair. On the hands, however, it is the dorsal surfaces which are usually attacked, either singly or in clusters, and again, warty bands are occasionally met with in various parts of the body, being merely groups of agglomerated warts, from 8 lines to several inches in breadth.

Fanciful names have been given to warts, as *V-plana*, *V-cylindrica*, *V-pedunculata*, &c.

As for venereal warts they may in some cases be non-specific, but generally are the result of sexual irritation, and vary from the small pedunculated wart to those of larger size, called cauliflower excrescences. Prepuccial warts are troublesome; for trivial cases the old-fashioned powder of equal parts of acetate of copper and powdered savin, dusted two or three times a day on the warts, the affected place to be washed occasionally with an astringent lotion, such as that of sulphate of zinc, is generally sufficient; however, in obstinate cases, after deadening sensibility with cocaïn, the application of a stick of potassa cum calce is a "sure" remedy, oil or water being afterwards used on the affected parts.

The flat wart occurring on the scalp I have always shaved off with a sharp knife, and then "punched" the raw surface freely with a piece of tough nitrate of silver, using Johnson and Son's "tough lunar caustic" for the purpose.

For warts on the fingers or hands the usual remedies are strong nitric acid, acetic acid, chromic acid, or removal by the knife. My experience of the acids is that they usually irritate and often spread the warty growth, so for several years I have adopted the following method, and always with success.

Some 8 or 9 years ago in driving a nail into a piece of wood, in place of hitting the nail I struck my left thumb

with the hammer; result—continuous pain, followed by a warty growth several lines in length and breadth. I followed the usual routine plan of “burning” the wart with nitric and other acids for some weeks, and succeeded in spreading the attack. After thinking the matter over I obtained an india-rubber finger-stall, similar to a glove finger, and wore the same night and day. It was sufficiently tight to make gentle pressure on the warts, which, moreover, were kept constantly in a moist and “macerated” condition owing to retained perspiration. In six weeks the warts had disappeared. I have frequently since then recommended this plan, and always with success. If the warts be on the hands or feet then a bit of an indiarubber bandage can be used, and will be found “curative.”

In cases where there are a large number of warts some dermatologists recommend arsenic to be given, and this is useful in such diseases as psoriasis and verruca, where there is a hypertrophous condition of the papillæ.

The peasants and poorer classes still believe in “charms” for warts, usually a gold ring and some mystic words. Another is that mentioned by Lady Wilde* “steal a piece of meat and apply it raw to the warts, then bury it in the ground and as the meat decays the warts will disappear.”

Professor Kaposi, of Vienna, in his book on diseases of the skin, translated by Dr. Johnston, of U.S.A., recommends excision of warts with the knife; whilst Dr. Norman Walker, of Edinburgh, in his recently published work on dermatology, and which I may be allowed to say does him infinite credit, advises that warts be snipped off with scissors. Both these plans leave slight marks. Young ladies as a rule do not like “cutting.” My method avoids all this.

* Ancient Cures, Charms, &c., of Ireland.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science by Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Volume XVI. Infectious Diseases. London: Sampson Low, Marston & Company, Limited. 1899. 8vo. Pp. 785.

It will be remembered that the publication of this volume was delayed, and that, in consequence, Volume XVII. appeared in advance. Now that Volume XVI. has been issued, all we can say is that it was well worth waiting for. Whether regard is had to the matter or the manner, this volume deserves close attention.

The "infectious diseases" discussed in its 785 pages are—lobar pneumonia, cerebrospinal meningitis, dysentery, yaws, erysipelas, simple continued fever, relapsing fever, and the ever-attractive typhoid fever.

Somewhat curiously, a dissertation on "Inflammation," by Dr. Ernst Ziegler, of Freiburg, has crept into the centre of the volume. With some propriety it precedes the admirable account of erysipelas, which comes from the pen of Dr. Otto G. T. Kiliani, attending surgeon to the German Hospital, New York.

The opening article is on "Lobar Pneumonia," by Dr. Andrew H. Smith, attending physician, Presbyterian Hospital, New York. But why "lobar?" We know what the author means, for his definition speaks of "an acute disease in which a specific parasite invades the air-cells of one or more pulmonary lobes," &c. Yet, surely the clinical and pathological experience of the past ten years should once and for all time dispose of the fiction that acute pneumonia is generally confined to a lobe. In young children the lobular distribution of fibrinous pneumonia has long been recognised. The author himself draws attention to this fact

in the following words: "The lesion of croupous pneumonia does not observe the boundaries of the lobes nearly so accurately in children as in adults" (page 131). In adults a multilobar or lobular distribution has become relatively common since the first pandemic of influenza in 1889.

Dr. Smith cannot accept the view that pneumonia is primarily a general infection with a secondary local lesion of varying intensity and importance, or which may remain absent altogether. No, he says that "it seems impossible from a careful consideration of all the phenomena to resist the conviction that the disease *begins* in the lungs" (page 7). Hence his definition: "Lobar pneumonia is an acute disease in which a specific parasite invades the air-cells of one or more pulmonary lobes, where it grows in a fibrinous medium exuded from the functional capillaries and generates a toxin that infects the system at large."

The author does not believe in the doctrine that pneumonia is a multiple infection. He is essentially an "unicist." For him the pneumococcus alone is the *causa causans* of the disease, and so this is the way in which he puts it—"Other infectious diseases seem often to open the way to infection by the pneumococcus. The specific fevers—typhus and typhoid, measles, erysipelas, dysentery—each is a frequent forerunner of pneumonia, and holds a causal relation to it. In these cases the pneumonia is modified by the pre-existing disease, and seldom follows the regular clinical course. It is apt to assume a wandering form, appearing in patches in different parts of the lungs, presenting irregular and fluctuating temperatures, lacking a definite crisis, &c." Surely his accurate observation of these atypical or abnormal pneumonias should have suggested to Dr. Smith that perhaps the lung affection in such cases was a secondary local manifestation of the primary disease, whether that was erysipelas, measles, or typhoid fever.

Again, sewer-gas or pythogenic pneumonia finds no place in his category, and the literature of the subject is ignored. This is the more to be wondered at, since his observations on climate as a predisposing cause of pneumonia show that he is in search of some other predisposing cause to explain the remarkable fact that pneumonia occurs more frequently in

cians, Dr. John Ratty, of Dublin, heading the list under date 1770.

At page 457 we meet with the following not very complimentary, and not—we venture to add—very accurate, paragraph:—"It was always Ireland which in the great epidemics that prevailed in the United Kingdom in 1868 and 1873, and also previous to this date, remained the centre whence the disease spread throughout Great Britain. It was Ireland again which was the source whence this scourge passed beyond the British Isles, and invaded other parts of the world, such as America." We were fairly aghast when we read this astounding statement. We rubbed our eyes and asked ourselves, metaphorically, whether we were dreaming or no. Our medical memory goes back further than 1868—

"Eheu! fugaces, Postume, Postume,
Labuntur anni"—

and, certainly, we can recall no epidemic of relapsing fever which could be termed "great." In support of his statement Dr. Popoff apparently quotes, as his authority, Murchison and "his classical work on 'The Continued Fevers of Great Britain' (1862)." How could any author, writing in 1862, describe epidemics stated to have prevailed in 1868 or 1873? There were no such epidemics in Ireland. In his history of relapsing fever Murchison, writing in 1873, of course mentions the great Irish epidemics of 1817-1819 and 1846-1849, and he does state that most of the British epidemics have been of Irish origin. He tells us also that in 1868 relapsing fever reappeared in Britain, but when an outbreak did occur that year in London he adds, "there was no relapsing fever in Ireland, there was no evidence of any of the patients having come recently from Ireland, and throughout the epidemic less than nine per cent. of the patients were of Irish birth." Murchison likewise shows that the Scotch epidemic of 1843 originated in Scotland, and scarcely, if at all, implicated Ireland. Murchison, therefore, is not responsible for the sweeping charge made against Ireland by the Russian professor, Popoff, in the inaccurate and very misleading sentences we have quoted from his monograph. Popoff seems really to have drawn his information from Hirsch's *Geographical and Historical Pathology*.

Hirsch, writing on Relapsing Fever, says, "Another series of outbreaks occurred in 1868-73. *There are no particulars of that epidemic for Ireland.*" Quite so, because there was no epidemic in Ireland—at all events, the Registrar-General for Ireland is silent on the subject.

Our Russian friend returns to the charge at page 460, when he writes—"Coming to America, and especially the United States, we find that relapsing fever was imported into Philadelphia by Irish immigrants in 1844." How could this be, since there was no relapsing fever in Ireland at that time? Here is what Hirsch says on this subject:—"It showed itself first in 1844 at Philadelphia among emigrants who had arrived from Liverpool, there being a few cases also among those in charge of them." Hirsch's authority is Dr. Clymer (*New York Medical Record*, Feb., 1870, page 575).

We confess that Professor Popoff's vague and inaccurate statements have shaken our faith in his account of relapsing fever.

More than 200 pages of this volume are devoted to a study of Typhoid Fever in two monographs. The first is on the ætiology and pathology of the disease by Dr. John S. Thacher, Pathologist to the Presbyterian Hospital, New York. The second article discusses the symptomatology and treatment. It is written by Dr. John Winters Brannan, of New York, who is well qualified for his task, being Clinical Lecturer on Infectious Diseases in Columbia University, as well as Visiting Physician to the Bellevue Hospital and to the Hospitals of the Health Department of the City of New York.

The definition of typhoid fever with which the first article opens is apparently the handiwork of both authors. It is peculiarly happy, succinct, and to the point—"Typhoid fever is a state of infection by the typhoid bacillus. A profound intoxication is commonly produced as well as certain anatomical lesions." (Page 551.)

Both articles form a very creditable piece of work, and together present a faithful review of our present knowledge of typhoid fever. It would naturally have gratified us had Dr. Thacher, in particular, expressed more recognition of

the recent work done by Irish physicians in this special field of research. Surely Dr. Wallace Beatty's case of typhoid fever without intestinal lesions might have been quoted, seeing the diagnosis had been scientifically verified by the application of Vidal's test. Also Sir George Duffey's classical case of perichondritis laryngea deserved mention, as did also Dr. Colpoys Tweedy's excellent paper on Periostitis following Enteric Fever, which was published in the *Transactions of the Academy of Medicine in Ireland* for 1886.

There is an interesting section (at page 744) on the "Specific Treatment with Bacterial Cultures or Serum." Dr. Brannan explains that the term "Specific Treatment" is now applied to the method of treatment by inoculation of attenuated bacterial cultures, or of antitoxic or bactericidal serum derived from them. But surely there was no "specific" treatment before this, and we must traverse the accuracy of the statement that "the term 'specific' was formerly applied to the treatment of typhoid fever by carbolic acid and other agents, which, by virtue of their antiseptic power, were believed to exert a specific or antidotal action on the disease."

From the foregoing criticism it will be seen that Volume XVI. of "Twentieth Century Practice" is replete with interest.

An Introduction to the Study of Materia Medica. By HENRY G. GREENISH, F.I.C., F.L.S.; Professor of Materia Medica and Pharmacy to the Pharmaceutical Society of Great Britain. London: J. & A. Churchill. 1899. Pp. 511.

THIS handsome volume is described by its author as being a short account of the most important crude drugs of vegetable and animal origin. It is designed for students of pharmacy and medicine, and is based on the subject-matter of the lectures delivered by Professor Greenish to his class. The crude "organised" drugs are treated of in ten sections, arranged in accordance with the organs from which they are furnished—*e.g.*, leaves, flowers, fruits, barks, &c. Under "unorganised" drugs are considered

the products of plants, such as extracts, gums, resins, oils, &c.; and a section is also devoted to animal substances. After an account of the source, and, in most cases, a brief history of each drug, a full description is furnished of it, and particular attention is directed to its diagnostic characters, which are categorically stated. In this way the student is encouraged to use his power of observation, and is aided in his capability of recognising the genuine article and in detecting adulteration of, or substitute for, it. The constituents of the drug are also given, as well as a very brief account of its uses. A large number of illustrations are scattered through the work, and many of these, especially some of those of leaves, barks, and roots taken from photographs, are extremely good. There are also numerous illustrations of the structure of different parts of plants as seen on microscopical examination.

The book is one chiefly for pharmaceutical students, and will doubtless deservedly become a standard text-book with them. Its general usefulness would be increased if among the numerous drugs described those which are official were indicated; and if the preparations of such that are contained in the last issue of the *British Pharmacopœia* were also specified.

A Treatise on Human Anatomy. By Various Authors.
Edited by HENRY MORRIS, M.A., M.B. Lond. Second
Edition, revised and enlarged. London : J. & A.
Churchill. 1898. Pp. 1274.

THE second edition of Morris's *Anatomy* is in every respect an excellent work—a sound, sensible, and healthy anatomy. Sound, because the work has been entrusted to tried men of considerable experience, who have produced a correct and trustworthy account of the parts with which they deal; sensible, because, as a rule, much of the padding which one finds in such works, many of the trivialities of the subject, useless and troublesome, have been left out, and in their place we find many additions in the direction of applied anatomy which are most useful both for the student and the practising medical man; and healthy

because the whole tone of the book is good, and generally in accordance with the present-day views on anatomy, combining, as it does, not only ordinary anatomy, but, in addition, such views on the morphology of the various parts as are necessary to make their true significance intelligible.

The contributors to the volume are—(1) Mr. Bland Sutton, who takes charge of the Osteology, and if we may be allowed to select a section for special commendation, it would be this one, which the author has treated in his usual masterly style. (2) Mr. Henry Morris, the editor, has written the Joints, which, needless to say, are done in a most thorough fashion, but to our mind much simpler and less elaborate descriptions would be better for the average student. (3) Mr. Davies-Colley has treated the Muscles very completely, but perhaps a little extravagantly as regards space. (4) Mr. W. J. Walsham has done ample justice to the Blood-vessels and Lymphatics, and gives us an excellent article, illustrated, as regards the lymphatics, by very ingenious diagrams after Dr. Sherwood. (5) The Neurology was written for the first edition by Dr. St. John Brooks, and has been revised by Dr. Arthur Robinson for the present issue, the resulting article being both accurate, complete, and readable. (6) The Eye has been successfully rendered by Mr. Marcus Gunn. (7) The Ear, Nose, Larynx, Heart, Respiratory Organs, and Tongue are the work of the late Mr. Hensman, revised for the present edition by Dr. Arthur Robinson; and of all we can speak in terms of praise. (8) The Digestive Organs above the diaphragm are by the same authors, and might, we think, be a little more thorough in certain regards—*e.g.*, mouth, palate, naso-pharynx, &c. (9) The remainder of the Digestive System is the work of Mr. Frederick Treves, and although the peritoneum and its development are handled in a most thorough and successful manner, the treatment of the viscera we do not consider so satisfactory—in fact they are not quite up to date; nor do we like the method of giving the relations of an organ by drawing a square with the name of the organ printed within it, and the names of the various relations around. Students try

to get this off by heart without trying to *understand* the relations, which is objectionable. (10) The Urinary and Generative Organs and the Skin are from the pen of Mr. William Anderson, and are very successfully treated. (11) A useful section of 120 pages on Applied Anatomy comes from the hand of Mr. W. H. Jacobson. (12) A short but interesting article on Vestigial and Abnormal Structures by Dr. Robinson winds up the book.

While we are able to express a very high opinion on the general merits of the work, there are some minor points with which we do not quite agree. For instance, the attachments of the rectus anticus minor, of the scalenus medius, and of the pectoralis minor and latissimus, shown in Figs. 82, 109, and 120 respectively, the attachment of the subscapularis in Fig. 123, of the shoulder capsule in Figs. 124 and 125, of the extensor indicis in 130, of the anterior crucial ligament, and the anterior fasciculus of the external lateral ligament (which is put where the posterior fasciculus is usually attached) in Fig. 163, the posterior fasciculus of the external ligament and the posterior crucial ligament in 164. The radius has no *outer border*, although referred to in connection with the insertion of the pronator quadratus, page 321. We do not like the insertion of the gluteus medius on page 353; it is incomplete. There is no reference to the origin of the obturator externus from the *body* of the pubes on page 362. The old and objectionable name, transverse portion of the arch of the aorta, is retained (page 467 and elsewhere) for a structure that is in no sense transverse. We are at a loss to understand the second diagram on the next page, 468; surely the right pulmonary vein lies in front of, and then crosses over, its artery, and not the reverse. We object very much to the shape of the arch of the aorta in the Figure 323 on the following page, even though it be a diagram; nor do we like the diagrams on page 474, which are too regardless of strict accuracy. On page 502 we remark that the name *tarsal cartilages* is still preserved—not wisely we think. The pancreatico-duodenal arteries are not correctly described; they do not run in the groove between the pancreas and duodenum. The true relation of the pancreas

to the superior mesenteric artery should be given on page 558. We doubt the statement, often made, that more than half of the superior cava lies inside the pericardium. The lateral sinus does not run horizontally outwards from the occipital protuberance, as stated; its course is arched (page 621). The account and picture of the end of the right suprarenal vein on page 632 does not agree with our experience. The line of reflection of the peritoneum at the left side of the spigelian lobe is not correct in Fig. 581. There is no good picture of the suprarenals, &c.

But, after all, these are minor matters, and represent simply some of the inaccuracies which will always creep into such a large work. Taking the whole book, it is well written, well illustrated, well printed and turned out, and, most important of all, it is good, sound anatomy—the kind of a book that a student or a practitioner should always have by him.

Laboratory Work in Bacteriology. By FREDERICK G. NOVY, Sc.D., M.D.; Junior Professor of Hygiene and Physiological Chemistry, University of Michigan. Second Edition. Ann Arbor: George Wahr. 1899.

DESPITE the continuous multiplication of text books of bacteriology, the merits of Dr. Novy's manual have caused its very general adoption in the United States, and have gained for it so assured a place that a second edition has just appeared. Although it has not been our practice to deal at any length in this department of the *Dublin Medical Journal* with second or subsequent editions, we nevertheless consider it only right to devote to Professor Novy's book something more than a mere passing allusion—and this for two reasons. In the first place, the work being printed and published in America is of necessity but little known on this side of the Atlantic; in the second place, its merits are so great and the thoroughness of the work is so admirable that we think the second edition may well be ranked in point of convenience and utility with the very best practical manuals at present used in British laboratories.

Before a writer can hope to convince others he must

first of all convince himself, or at any rate appear to have done so. Dr. Novy complies to the full with this first condition, and boldly claims for bacteriology a fuller measure of recognition in the medical curriculum than it has hitherto received, on this side of the water at any rate. Let us hear him plead his own case:—"A thorough course of laboratory instruction in bacteriology is absolutely essential to the proper education of the medical student of the present day. The practical knowledge thus acquired in the methods of handling bacteria, in the precautions necessary to the prevention of personal infection, and in the methods for the recognition and for the distinction of disease-producing organisms is fundamental and invaluable. Such information is directly useful as a means of diagnosis; it is essential to the successful performance of antiseptic operations, and is indispensable to the proper execution and understanding of the common hygienic measures for the prevention of communicable diseases. It is, therefore, evident that the course in bacteriology should not be inferior either in length or in the character of the instruction to any other laboratory course offered in the medical curriculum."

There is much force in this pleading, and despite the efforts of those who would pare down the work and cut down the fees of medical schools to the uttermost, with the immediate object of "lightening the burden" cast upon the "unfortunate" student, but with the ultimate result of throwing open the portals of our profession to the swarm of needy, half-educated struggle-for-lifers, we cannot help thinking that the tendency of the time is rather in favour of the scientific teaching so vigorously pleaded for by Dr. Novy. "Bacteriology," he goes on to say, "as an educational measure of the first importance belongs to the first or, at the latest, the second year of a medical course. The student is thus enabled to make use of his knowledge in connection with his clinical studies. The spirit of scientific investigation and not mere book-reading must be fostered in the student from the outstart, since it is this that leads to progress in medicine, and serves to distinguish the true physician from those bound down by blind faith, com-

mercialism, or ignorance." Nor is Professor Novy merely the voice of one crying in the wilderness. "During the past ten years," he says, "three laboratory courses in bacteriology have been given annually in the hygienic laboratory of the University of Michigan. Each course covers a period of twelve weeks of daily work, to which the entire afternoon is devoted. Inasmuch as this laboratory work is required of all medical students the number of students which (*sic*) annually take the course at times exceeds two hundred." Here we must leave off quoting textually from our author with the remark that if two hundred students are annually put through a course of practical bacteriology, such as is sketched out in this book, in one single American university, then we are about to assist at a very interesting object-lesson on the effect produced upon the profession in America by the early administration of full doses of high-class scientific instruction. Will they be the better of it? *Qui vivra, verra.*

Now for some details about the contents of the book and their arrangement.

The initial chapters are devoted to such a theoretical description of the form, classification, and life-history of the bacteria as may serve to render intelligible the ensuing practical demonstrations. The author's style is not always beyond reproach. Thus, on the very first page he tells us that "inasmuch as bacteria belong to the lowest and simplest forms of life *it cannot be expected that they will show any marked differentiation into plants. . . .* In their characteristics of growth, multiplication, and reproduction *they resemble the group of algæ more than any other group of living beings*, and it is this general relationship rather than any one peculiarity which has led to their being placed in the vegetable kingdom." [The italics are ours.] Apart altogether from the ambiguity of the second italicised passage the accuracy of the statement it conveys may fairly be questioned. Then, again, a few lines lower down the writer speaks of "moulds or fungi" as though the two classes were co-extensive. On page 35 we find it stated that the bacilli are, as a rule, motile (!), and a little lower down—"certain bacteria scarcely show real motion

at the ordinary room temperature, because of the presence of a slimy secretion. When placed, however, at the temperature of the body the motion becomes well marked." To what bacteria does the author allude? In didactic works the use of the word *certain* instead of specific names is much to be deprecated.

A point which cannot fail to strike the British reader is the prominence given by the author to the structures which he calls "giant-whips." These are enormous (up to 132μ long) spindle-shaped, spiral bodies which are said to abound in the condensation water of agar cultures of motile bacilli. Though derived apparently from detached flagella they are immensely larger than the very organisms on which the flagella occur. Though first observed by Löffler and subsequently described by Sakharoff and A. Fischer, "giant-whips" do not seem to have excited much attention on this side of the Atlantic, and Dr. Novy's surprising figure (7) is the first representation we have seen of these strange objects.

Illustrations of the various species of bacteria are omitted and blank pages are left to be filled in by the student from his own cultures and microscopic preparations.

The last few chapters are for the advanced worker the most interesting. In chapter XIII., on the examination of water, soil, and air, we note that Dr. Novy includes traces of *nitrous* acid amongst the constituents of a "good" water supply. On the same page we find an amusing printer's "devil" —, "the chlorine, nitrates, nitrites, and ammonia are in themselves harmless and can be taken with *impurity* (*sic*) in relatively large doses." *Apropos* of the examination for typhoid and pseudo-typhoid bacilli, Dr. Novy makes no allusion to the useful methods of Parietti and Abba, nor yet to the method of plating-out the Berkefield-filter-residue in carbol-gelatine. On the other hand, we find complete instructions for the preparation of Elsner's medium and for making Stoddart's gelatine-agar. With regard to the last-named its utility is far from clear to the present writer. It would appear to be a method of demonstrating the superior mobility of Eberth's bacillus, but why "direct microscopic examination or the

staining of flagella will not give a satisfactory indication of the mobility" is precisely what we should like to know and what Dr. Novy fails to explain. The veriest tyro will not mistake the lazy movement of *typical B. coli* for the wagging and darting of *typical B. typhosus*; it is the actively mobile "coli-form" and pseudo-typhoid forms that are liable to give rise to error in diagnosis, and how such error is to be avoided by the use of Stoddart's medium is far from obvious.

We have left ourselves no space in which to deal with what is perhaps the most useful feature in the whole work—viz., the fulness of detail with which certain of the more difficult bacteriological procedures are described. We may instance the preparation of toxins, the filtration of bacterial liquids, the testing of antitoxins, and above all the making of collodion-sacs, the use of which has yielded, more especially in the hands of the Pasteur school, such important results. We know of no such complete treatment in the English language of these technical parts of the subject. There is just one final observation which occurs to us with regard to the author's somewhat meagre account of agglutination. He directs that the drops of diluted serum be "inoculated with a minute portion of agar culture of the Eberth bacillus." Surely no more certain method of producing pseudo-reactions could well be devised! These errors in matters of detail are, however, more than counterbalanced by the merits of the work, and we can safely congratulate Professor Novy on having made a very valuable addition to the literature of bacteriology.

The Edinburgh Medical Journal. Edited by G. A. GIBSON, M.D., F.R.C.P. Ed. New Series. Vol. V. Edinburgh and London: Young J. Pentland. 1899. 8vo. Pp. 648.

ALL that need be said of the fifth volume of the new series of this old-established monthly medical journal is that, under the able editorship of Dr. G. A. Gibson, it maintains the high literary standard reached by its predecessors.

There are no fewer than thirty-five original articles in

this volume, several of them written by the foremost men in the profession in Scotland.

The other contents are full of interest, consisting of reviews of British and foreign literature, reports of societies, reports on recent advances in the various branches of medical science, analytical reports, and monthly notes on meteorology and vital statistics.

An Apology for the Intermediates (for Boys). By MAURICE C. HIME, M.A., LL.D., some time Head-Master of Foyle College, Londonderry. London; Simpkin, Marshall, Hamilton, Kent & Co. Dublin: William M'Gee. 1899.

IN his preface Dr. Hime says, "I have tried to imagine myself, throughout my 'Apology,' a witness being orally examined by the Commissioners, answering their questions, and, when necessary, explaining my answers."

To the question, "Is it not a fact that boys' health has been injured, their eyes in particular, by the amount of study necessitated by these examinations?" he replies, "Certainly not. I have never known of a child's general health, or eyes in particular, being injured by reading for the Intermediates." He admits that he has known of two instances of children whose general health, and one whose eyes were affected temporarily by overstudy, but this occurred at a school which did not prepare pupils for the Intermediates, and where the daily school and study hours were longer, and the time allowed for play less, than at Foyle College, or any other Intermediate school with the working of which he was acquainted.

To the next question: "But have not several distinguished oculists lately asserted that preparation for the Intermediates actually does injure the eyesight?" he replies, "Yes, asserted this they certainly have, but assertion is not proof." Precisely so, and the same applies equally to Dr. Hime's very positive assertion in reply to the former question, an assertion grounded almost exclusively, as most of his very assertive answers are, upon his experience as Head-Master of Foyle College, where very exceptional attention appears to have been bestowed upon the hours of study and of recreation.

But surely

Dr. Hime does not suppose that all the Roman Catholic and Protestant schools and colleges throughout Ireland are managed on the same lines as Foyle College.

In the evidence before the Commission it was freely admitted that a deterioration of eyesight was inseparable from the spread of civilisation and education. That had been proved long ago by the very exhaustive investigations made in Germany, America, and England, and the result has been that of late years a great deal of attention has been devoted to the question of school hygiene, with the object of securing as far as possible a mitigation of the evils which are a necessary consequence of educational progress. The charge brought against the present Intermediate system is that by the payment of results fees and prizes it offers a premium for over-pressure, and notwithstanding all Dr. Hime's assertions to the contrary we maintain that this is so. It is simply incredible that the leading oculists throughout Ireland, and a number of the chief medical authorities in Dublin, should have voluntarily testified to the disastrous results of this system from their own experience in their practice, if the evidence had not been overwhelming.

It is an established fact, says Dr. Hime, that parents "pay far more attention now-a-days to their children's eyes, even as they do to their teeth, than they used to do formerly, and oculists and dentists alike are consulted far more frequently than they used to be, parents recognising more and more the importance of having their children's teeth and eyes properly attended to. How strange that dentists have not also been brought prominently forward to prove that children's teeth are going from bad to worse in consequence of the Intermediate system." We have very little doubt that had the attention of the members of the dental profession been directed to the matter, and their opinion asked, it would have amply corroborated the other medical testimony. It could scarcely be otherwise—that is to say, in cases where there has been a break down of the general health, for whatever will cause an impairment of the general state of the system will be pretty sure to lead to dental trouble. It is obvious that the attention of dentists would not be so directly drawn to the connection between over-pressure at school and

the condition of the teeth, as in the case of the general health or eyesight.

Undoubtedly parents do bestow a great deal more care upon the eyes and teeth of their children, for the spread of education has forced it upon them, besides knowledge has made great strides as regards the errors of refraction and dental maladies, and their connection with the general state of the health. The testimony of parents is an important factor in proving the truth of the charge against the Intermediates, and little difficulty would have been experienced in finding witnesses to corroborate the medical evidence.

One most important point as regards the medical evidence is of course excluded from Dr. Hime's "Apology," and that is, the deleterious effects of the Intermediate system upon the general health and eyesight of girls. Looking at the whole question from the medical point of view it is absurd to exclude this and to attempt to answer the objections brought forward by assertive contradictions.

Progressive Medicine: A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D.; Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital; Laureate of the Royal Academy of Medicine in Belgium, of the Medical Society of London; Corresponding Fellow of the Sociedad Española de Higiene of Madrid; Member of the Association of American Physicians, &c. Volume I.—Surgery of the Head, Neck, and Chest; Diseases of Children; Pathology; Infectious Diseases, including Croupous Pneumonia; Laryngology and Rhinology; Otology. March, 1899. London: Henry Kimpton.

As the editor very truly and very graphically observes in his preface, "the state of the progressive medical man of to-day is that of a man who, while hungry for food, has thrust upon him such a mass of pabulum, prepared in so many forms by so many cooks, that it is possible for him to get not a taste of many dishes from which he might obtain much

pleasure and strength if he but knew their real value and design. Often the technical appearance of an article staggers his mental digestion, and he casts it from him as being too difficult a morsel for him to assimilate. There are at the present time numerous 'annuals' or 'year-books' published with the object of recording in condensed form the greater part of the medical literature of the year, but in nearly all of them the process of boiling down has been practised without first sifting the useful from the useless, with the result that the physician has presented to him a mass, concentrated, it is true, but so varying in quality that the good can only be separated from the bad by a process as difficult as that needed for the utilisation of the crude material. What the young physician needs to-day is a well-told tale of medical progress in all its lines of thought, told in each line by one well qualified to cull only that matter which is worthy of his attention and necessary to his success."

Such is the *raison d'être* of the present beautifully-printed volume of 490 pages. The character of paper, type, and illustrations makes it a real pleasure to turn over the leaves of this book; and the matter of the text is thoroughly worthy of the dress in which it has been placed by the combined good tastes of printer and publisher. We cordially congratulate the editor on the *matter* and *manner* of his new and arduous enterprise. As he tells us, "every contributor to the pages of PROGRESSIVE MEDICINE has been asked to say what he has to say in a narrative form, and, equally important, to place his hall-mark on the text, so that it will be a story which bears a personal imprint, and will express not only the views of the authors cited, but the opinion of the contributor as well."

The text is arranged under six heads—mentioned in the title. Of these, the first has been contributed by J. Chalmers Da Costa, M.D.; the second by Alexander D. Blackader, M.D.; the third by Ludvig Hektoen, M.D.; the fourth by William Sydney Frazer, M.D.; the fifth by A. Logan Turner, M.D. (Edin), F.R.C.S. Edinburgh; and the sixth by Robert L. Randolph, M.D. The last ten pages of the volume are occupied by an excellent index.

We have carefully examined the pages of this new

“Quarterly,” and have jealously scrutinised the parts which deal with the special departments in the literature and practice of which we have recently been most deeply engaged, and we can fully congratulate the various authors on the conscientious thoroughness with which they have performed their respective tasks. We cordially recommend it to every medical man as a most reliable summary of the professional progress of its period.

Treatment of Disease by Physical Methods. By THOMAS STRETCH DOWSE, M.D. Abd.; F.R.C.P. Ed.; formerly Physician-Superintendent, Central London Sick Asylum; President, North London Medical Society; Member of Council and Secretary for Foreign Correspondence, Medical Society of London; Physician to the North London Hospital for Consumption and Diseases of the Chest, to the North-West London Hospital, and to the West-End Hospital for Epilepsy and Diseases of the Nervous System; Associate Member of the Neurological Society of New York, &c. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd.; Hirschfeld Brothers. 1898.

THIS portly and handsome octavo of 412 pages gives a very good practical summary of the existing state of our rapidly progressive knowledge of the treatment of disease by physical manipulations of various kinds. The author is a well-known expert in the medical applications of electricity, massage, &c., and gives us, in these pages, the advantages of a clear mental reflex of many years' experience in one of the most important departments of medical knowledge.

When so vast a domain has to be surveyed the application of detailed criticism is nearly always idle, except for the purpose of pointing out gross errors, or expressing the pronounced divergence of the reviewer's opinions. In the present instance we have neither of these excuses to advance. We have read Dr. Dowse's book with attentive care from beginning to end, and unhesitatingly recommend it to our readers as the best introductory text-book we know to the

study of the theory and practice of the physical methods of treating disease, which he has himself so successfully practised.

Notes on Surgery for Nurses. By JOSEPH BELL, M.D., F.R.C.S. Edin.; Consulting Surgeon to the Royal Infirmary and to the Royal Edinburgh Hospital for Sick Children. Fifth Edition, thoroughly revised. Edinburgh: Oliver & Boyd. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. 1899.

To this new issue the author has "added an Appendix treating of the important and interesting question raised as to the Relation of the Trained Nurse to the Profession and the Public." The fact that this neat little volume is a fifth edition represents the most convincing testimony that could well be offered of the fact that the author's work has been appreciated by the public, and was originally needed for the supply of an existing want. We have no doubt whatever that the present issue will retain the popularity which was so well deserved by its predecessors. Detailed criticism of fifth editions constitutes a waste of time and energy. We will only say that the author has done his duty by the present volume in bringing it thoroughly up to date.

A Primer of Psychology and Mental Disease for Use in Training-schools for Attendants and Nurses and in Medical Classes. By C. B. BURR, M.D.; Medical Director of Oak Grove Hospital for Nervous and Mental Diseases, Flint, Mich.; Formerly Medical Superintendent of the Eastern Michigan Asylum; Member of the American Medico-Psychological Association, &c. Second Edition, thoroughly revised. Philadelphia: The F. A. Davis Co. Pp. ix+116. 1898.

THIS little work is mainly intended for asylum attendants, though it is said to have been found useful for medical students also.

A brief glossary is followed by a section (Part I.) devoted to a short but very readable account of normal psychology.

Although not wanting in certain loosenesses of statement, to say the least, this might serve as an introduction to the subject for a medical student who proposed to correct his impressions by subsequent reading, but we entirely fail to see the usefulness of burdening asylum attendants with a mass of purely theoretical considerations, which, indeed, unless in America attendants are much better educated as a class than in this country, will be very imperfectly understood, and whether understood or not, have little bearing on their everyday work.

The second part is devoted to the consideration of insanity, and in the opening paragraphs stress is rightly laid on the importance of comparing a patient's "*present* with his *former* habits of thinking, feeling, and acting." The *causes* of insanity are classified into (1) direct physical causes; (2) indirect physical and emotional causes; (3) vicious habits; and (4) constitutional and evolutionary causes, amongst the last being pubescence and adolescence, the adolescent period being given as from 30 to 35, which must surely be an misprint. Passing over one or two points which are open to criticism, we may accept this as a passable rough arrangement; but we are not at all disposed to admit the usefulness of the author's division of the insanities, while his description of individual varieties seems to us far too difficult for the class of readers for whom it is mainly intended. Thus, we altogether doubt the existence of "hystero-mania" and "hystero-melancholia" as varieties of sufficient importance to merit separate names, while the term "dementia" is used in a loose manner which cannot fail to give rise to confusion. We note that paranoia is described as if in all cases following the course of symptoms termed by Magnan "megalomania," and though we do not agree with this, the description, it must be admitted, is well done. On the whole, this section suffers from elaboration of theoretical detail at the expense of practical utility.

The third section, however—on the "Management of Cases of Insanity"—deserves nothing but praise, and we do not think it possible to find a better arranged or more concise, clear, and judicious short account of the proper

lines of treatment to follow in mental disease. Even asylum physicians may pick up useful "wrinkles" from this admirably-written section, which is worth all the rest of the book together. We may particularly commend the caution as to the danger of over-feeding patients where food has to be administered mechanically.

Part IV., which is simply the reprint of an address by the author on the duties of asylum attendants, written in rather a high-faluting style, could very well have been spared here, however suitable it may have been for its original purpose. Had the space taken up by this and by discussion of purely psychological points being devoted to such an account of elementary anatomy and physiology as would assist attendants to understand their duties, it would, we think, have been far more to the purpose.

The inadequacy of the book is the more to be regretted that it is well written and readable, and, like most American medical works, excellently printed and got up.

The Origin, Growth, and Fate of the Corpus Luteum, as observed in the Ovary of the Pig and Man. By J. G. CLARKE, M.D. Baltimore: The Johns Hopkins Press. 1898. Pp. 40.

THIS able paper forms the fourth number of the seventh volume of the "Johns Hopkins Hospital Reports." It records the results of work done by the author in Leipzig under the direction of Professor Spalteholtz, and has already been published in German. A thorough investigation of the different stages in the development and decline of the corpora lutea in the ovary of the pig was carried out by means of parallel sections, some of which were stained by a modified v. Gieson method, and some of which were submitted to the valuable digestive method of Spalteholtz and Hoehl. These two methods control one another, and allow of more exact conclusions than either alone. The results got from the pig were compared with those derived from a less complete series of human ovaries, and a very definite theory of the function of the

corpus luteum is given. It is best to give the author's conclusions in his own words:—

“1. The lutein cells are specialised connective-tissue cells, which appear in the inner layers of the follicle wall at the time when it begins to show a differentiation into the theca interna and externa, and gradually increase in size and number until the period of maturity, when they have assumed all of the characteristics which cause them to be designated lutein cells. The corpus luteum is, therefore, not an epithelial but a connective-tissue structure.

“2. In the growing follicles the lutein cells are increased at the expense of the ordinary connective tissue cells until the latter are represented by only a few cells and a fine reticulum in the mature follicle. This reticulum forms a fine web, stretching from the theca externa among the lutein cells, beyond which it is woven into a more or less fine line known as the membrana propria.

“3. At the time of the rupture of the follicle, the membrana propria is broken through in places by the advancing lutein cells and blood-vessels, but quickly reforms a connective-tissue line in front of the lutein cells, which push it towards the centre, where it finally forms a dense core of interlacing fibres.

“4. After the rupture of the follicle the lutein cells (connective-tissue cells) show a remarkable activity in growth, increasing both in size and numbers until the empty cavity is completely filled in, after which they begin to undergo degeneration.

“5. The fine reticulum between the lutein cells of the mature follicle is the antecedent of the connective-tissue cells, which are quite sparse in the first stage of the growth of the corpus luteum, but become the predominating structure at the height of its development.

“6. The degeneration of the lutein cells is probably induced through the increasing density of the connective tissue surrounding them.

“7. The retrogression of the corpus luteum is characterised first by the fatty degeneration of the lutein cells, followed by the shrinking of the connective-tissue net into a compact body (corpus fibrosum), after which it is gradually removed through hyaline changes until a very fine scar-tissue is left, which is, at last, lost in the ovarian stroma.

“8. The blood-vessels of the corpus luteum are quite resistant, and the larger ones are among the last structures to give way in the process of retrogression.

“9. The office of the corpus luteum is that of a preserver of

the ovarian circulation, which exercises its function almost perfectly in the younger woman, but which at last, with the increasing density of the stroma, begins to fail in its activity, its remains being slowly or imperfectly absorbed until these deposits finally exert the opposite influence and hasten the laming of the circulation.

"10. Cessation of ovulation is induced, not through the disappearance of follicles *per se*, but through a densification of the ovarian stroma and a destruction of the peripheral circulation which prevents their development."

Two beautifully-executed plates, containing 17 partly-coloured figures, illustrate the descriptions given in the text.

RECENT WORKS ON DISEASES OF CHILDREN.

1. *The Diseases of Children, a Clinical Handbook.* By GEORGE ELDER, M.D., F.R.C.P. Ed., and J. S. FOWLER, M.B., F.R.C.P. Ed; Clinical Tutors, Edinburgh Royal Infirmary. London: Charles Griffin & Co. 1899.
2. *Aids to the Treatment of Diseases of Children.* By JOHN M'CAW, M.D., L.R.C.P.; Senior Physician to the Belfast Hospital for Sick Children. Second edition. London: Baillière & Co. 1899.
3. *The Care of the Baby.* A Manual for Mothers and Nurses, containing practical directions for the management of infancy and childhood in health and disease. By J. P. CROZIER GRIFFITH, M.D.; Clinical Professor of Diseases of Children in the University of Pennsylvania. Second edition. Philadelphia. 1899.
4. *Transactions of the American Pediatric Society.* Tenth Session. Vol. X. 1899. Reprinted from the "Archives of Pediatrics, 1898."
5. *Archives of Pediatrics.* Vol. XVI. Nos. 1-6. 1899.
6. *Pediatrics.* Vol. VII. Nos. 1-12. 1899.

1. THIS is an attractive-looking volume. It has been prepared with some trouble and not altogether without success. For a volume compiled, as we are told, exclusively from the works of others, it has been fairly well done. The authors have put together much information from many sources, but we much prefer original clinical observations, however small they may be, provided they be accurate.

Objecting, as we do, to gain anything second-hand when it can be gathered fresh from the original, we cannot commend the compilation of such volumes as these, as they tend to encumber the literature without increasing knowledge. It is convenient in size and shape, but the print is too small for comfortable reading, and the paper is not good. There is no description of Friedreich's disease, thrombosis of the cerebral sinuses, or those most interesting cases of functional ataxy.

2. We are, despite many omissions and some obsolete or erroneous views, favourably impressed with this little handbook. With some revision or, perhaps, "co-editing" with some other authority on diseases of children, it is capable of being made into a very useful book for senior students. There is no description of "rheumatoid arthritis," "functional ataxy," "posterior basal meningitis," "thrombosis of cerebral sinuses," "habit spasm," "purpura fulminans," "Friedreich's disease," or "spastic paraplegia," or "empyema."

It is difficult to treat all diseases concisely and yet correctly, and we think Dr. M'Caw has made the best attempt at such a book with which we are acquainted.

3. This is intended to be a guide to mothers and nurses on all that pertains to young children in health and disease!—a title sufficient to ruin any book from the magnitude of its scope. The first half of the book is suitable to the purpose, but we must condemn in the strongest manner any wholesale popular treatment of such a subject in this way. The author says it is not intended to supplant the physician, but he does so, and we believe books of this nature may do incalculable harm. The second half of the book is a small practice of medicine, and we believe a most dangerous book to place in the hands of either mothers or nurses. Directions as to the *care* and *nursing* of sick children is one thing, but directions for treating and distinguishing dangerous diseases one from the other is grossly mischievous and ridiculous, considering neither mother nor nurse can possess the knowledge to even recognise them.

4. These Transactions are useful publications, and the present volume can be consulted with profit on the following subjects :—" Hospitals for Infants," by Emmett Holt : " Infantile Scurvy," " The Heating of Milk for Infant Feeding," " Laryngeal Diphtheria," and " The Anæmias of Infancy." They are beautifully reprinted from " The Archives of Pediatrics," and most capably edited by Dr. Floyd Crandall.

5. This journal continues to please its readers, and we venture to again remind the publishers that with a little alteration it would surely still more delight its subscribers and keep far ahead of any other journal on children's diseases which we know. We allude to advertisements on the *front cover*. These should be totally expunged. These numbers contain some very interesting papers, amongst them being the following subjects :—Tetany, whooping-cough, incontinence of urine, Friedreich's disease, croup (laryngeal diphtheria), opium in children, sudden deaths in children, chorea, laryngismus, rickets, night terrors, and syphilis. It is printed on good paper, and but for two advertisements the front cover is attractive. Dr. Floyd Crandall is to be congratulated warmly on the continued success of this journal, and also the publication of the Pediatric Society's Transactions.

6. There is some improvement in the cover of this magazine, and we hope it will continue. Its appearance has formerly been against it. There are some interesting papers in this volume, amongst which may be mentioned those on whooping-cough, tuberculosis, syphilis, laryngitis and laryngeal spasm, convulsions, and diphtheritic paralysis.

The Great Eastern Railway Company's Tourist Guide to the Continent. Edited by PERCY LINDLEY. Illustrated and with Maps. London : 30 Fleet-street. 1899. 8vo. Pp. 158.

AT this holiday season of the year information as to pleasant Continental trips is bound to be grateful to the jaded over-

worked members of our profession who seek rest and recreation. The publishers have been good enough to place in our hands an advance press copy of the Gt. Eastern (England) Railway Company's "Tourist Guide to the Continent," published at the price of sixpence. Among its fresh features are particulars of the New Express Service to Norway, Denmark, and Sweden, *via* the Royal Mail Harwich-Hook-of-Holland route, of new tours in the Luther country and Thuringian and Hartz Mountains, a series of Continental maps, and a chapter, "Dull, Useful Information," giving particulars as to the cost of Continental travel. The editor, Mr. Percy Lindley, has done his part of the work right well, and the guide is a marvel of cheapness as well as a mine of information.

A Manual of Diseases of the Nervous System. By SIR W. R. GOWERS, M.D., F.R.S. Third Edition. Edited by SIR W. R. GOWERS and JAMES TAYLOR, M.D. Vol. I.—Diseases of the Nerves and Spinal Cord. London: J. & A. Churchill. 1899. Royal 8vo. Pp. 692.

It is with sincere pleasure that we welcome a new edition of this truly classical book. Among works on the diseases of the nervous system it has no superior, and very few equals. In the preparation of the present edition Sir W. R. Gowers has had the assistance of Dr. James Taylor, Assistant Physician to the National Hospital for the Paralysed and Epileptic, who is himself a very distinguished neurologist. The editors have, they tell us, carefully revised every chapter, and added much new matter. This is apparent even to the most casual reader. The general arrangement of the work remains as in the previous editions; but to the first part, which treats of general symptomatology, is appended a new section on the general constitution of the nervous system, in which a short account is given of the modern views of the structure of the nervous organs. The nervous element or neuron is described; the want of structural continuity between the different neurons is pointed out; the fibrillar structure of the processes of the the ganglion cells, both axon and dendrites,

is insisted on, and the important alterations in our ideas of the origination of nervous processes, which are necessitated by the discovery that the fibrils of the axis cylinders do not terminate in the nerve cells, but merely pass through them, are clearly shown.

In the second part, on the diseases of the nerves, we find admirable chapters on some affections little known and very difficult of diagnosis, as brachial neuritis, general crural neuritis, and rheumatic neuro-myositis. In an appendix to the chapter on the last-named disease we note the following passage:—"It should be noted that the influence of gout, including ancestral gout, is a subject on which the young practitioner starts with a high degree of scepticism regarding the teaching of his seniors. But year by year his doubts become fewer, as they are rubbed away, or removed more sharply by contact with facts."

The chapter on multiple neuritis is considerably extended, and gives a masterly account of this class of affections.

The third part, on the diseases of the spinal cord, opens with an excellent account of the structure of this organ. The antero-lateral ascending tract, or tract of Gowers, as it is commonly called after its discoverer, is traced to the cerebellum, while some fibres, running in the same position, pass up near the fillet and end in the corpora quadrigemina or optic thalamus. These correspond to the crossed efferent tract of Edinger. The matter is, however, not yet quite clear in the case of man, although experiments on monkeys leave little doubt as to the cerebellar destination of Gowers' tract in these animals, for Rossolimo has, in a case of tumour of the cord, traced Gowers' tract into the posterior corpora quadrigemina, the substantia nigra, and the globus pallidus.

The section on the functions of the cord is a succinct and in every way admirable treatise on the physiology of this part of the nervous system. Conduction of touch and of impulse from the muscles takes place in the posterior columns, and of pain, and probably of temperature, in the grey matter. Head's diagrams of the sensory areas of skin corresponding to the different spinal segments are given, with a most valuable table showing the approximate

relations to the spinal nerves of the motor and reflex functions of the spinal cord.

In the descriptions of the special diseases of the cord which follow, we everywhere meet with those additions and alterations which the advance of knowledge has made necessary. In particular we would point to the chapter on the muscular dystrophies as an example of the lucid and complete treatment which the most difficult subjects receive.

In an appendix, Dr. F. E. Batten gives a description of the muscle spindle, a curious structure, long known, since it was first described by Kölliker in 1862, but whose real import has only recently been shown by Sherrington, who has proved experimentally that it is a terminal sensory organ.

The volume ends with a good index. The text is illustrated by 192 figures. The printing and binding leave nothing to desire.

A Treatise on Fractures and Dislocations. For Students and Practitioners. By LEWIS A. STIMSON, B.A., M.D.; Professor of Surgery in Cornell University Medical College, New York. In one octavo volume of 823 pages, with 321 engravings and 20 full-page plates.

THE new edition of Professor Stimson's work, issued in a single volume, is a decided gain both for the student and the practitioner. It renders reference to the work much easier than was the case while the *Fractures and Dislocations* were in separate volumes, and now the information furnished is brought down to date for both subjects. The work has had its chief use in the range and accuracy of its bibliographical references, and naturally the writing of these down to date is a great advantage for the student.

In many points relating to classification of fractures we notice statements to which one might well take exception—points, too, which, examined from a restricted power of view, embarrass the student. There is no subject more likely to confuse his mind than that of spontaneous fracture, and here we find the well-known study by Trousseau

and others of the rickets of infancy, of adult age, and of old age ignored in the following passage:—"Friability due to rachitis is found only in childhood, for the disease is one that involves the bones only during their period of growth, and consists essentially in the prolongation and exaggeration of the embryonal or developmental condition of the shaft, in consequence of which its strength and the firmness of its union with the epiphyses are diminished." In the immediate context the varieties of osteoporosis, other than the rickets of childhood, are discussed, without a hint at the possibility of there being any close pathological relation of the diseases, nor any suggestion from the side of treatment that the diseases are controllable by the same drug—*i.e.*, cod-liver oil. In the passage we have quoted there is a suggestion which we think is erroneous—namely, that the fractures of infantile rickets are apt to occur at the junction of the diaphyses with the epiphyses, which is not the fact. It is hard to discover the good of the author's new departure, for which he takes especial credit in his preface, with regard to fractures of the skull. We read:—"The portion treating of fractures has been almost wholly rewritten, the most marked change in classification and arrangement being that made in the chapter on fractures of the skull, in which for the former classification—as fractures of the base and vault—that of circumscribed fractures of the vault, and fissured fractures with injury of the brain, has been substituted." We cannot imagine any lecturer on surgery introducing the subject to a class intelligibly with such a grouping, nor can we recommend this chapter of Professor Stimson's to either student or practitioner. In addition to objections on the score of classification, we are forced to examine one of the author's theoretical discussions:—

"The mechanism by which the fracture (Colles') is produced has been and still is the subject of much discussion. Three theories have been advanced:—(1) Fracture by splitting or crushing; the cancellous tissue is crushed or comminuted between the carpus and the diaphysis. (2) Fracture as in other bones by decomposition of the force and yielding at the weakest point. (3) Fracture by cross-strain exerted through

the anterior ligament in exaggerated and forced dorsal flexion (hyperextension) of the hand. I believe that almost all these fractures are produced according to one or the other of the first two ways, and that the third is rarely seen. In the first the weight of the body is received on the ball of the hand—the carpus—directly in the line of the long axis of the radius, and the inner end of the scaphoid or the semilunar splits the end of the radius like a wedge. This is shown by many specimens, and appears to be especially frequent in the elderly.

“ In the second the line of the force is slightly inclined from the long axis of the radius, making an angle open anteriorly. The arm is outstretched, and not directly in the line of the fall. The force is decomposed as usual, part being taken up by the resistance of the long axis, and part acting transversely to break the bone.”

We have quoted a sufficient length of the discussion on the mode of production of Colles' fracture to illustrate some of the faults of the text, which render the detailed study of any injury very irksome and tedious—*e.g.*, “forced dorsal flexion (hyperextension) of the hand.” Why cannot the author be content with the ordinary language of surgery and of anatomy, and use the term extension instead of “dorsal flexion”? Again, “between the carpus and the diaphysis;” surely the term diaphysis is not correctly used when the author writes about the bone of which the growth is completed, and to describe the inferior articular surface of the bone. Lastly, “an angle open anteriorly,” where the writer means “open posteriorly.”

Faults of this kind are to be found in all parts of the work. The descriptions of the lesions of the elbow, both fractures and dislocations, are most difficult to follow until one has mastered the varied meanings attaching to the terms condyle, epicondyle, epitrochlea, which the author uses in a style quite peculiar to himself.

We cannot close this notice without quoting the caution expressed by the author with regard to the unbounded faith with which some would receive the readings of the X-rays:—“ While the X-rays have been of interest and value in showing details of certain fractures—especially at the wrist, elbow, and ankle—yet it cannot fairly be said

that they have yielded much information of practical value which could not be obtained by palpation.

“ Probably their usefulness will be increased by improvements in methods and apparatus, but at present the information which they give needs to be sifted with great care from among many misleading appearances.”

From the observations made above it will be clear to our readers that we regard this book with very mixed feelings. We cannot but praise its excellence as a very complete bibliographical reference, and as furnishing very good illustrations of almost all important fractures. Here our praise must stop, for the text is replete with the kinds of imperfections of which we have quoted enough examples.

Hygiene and Public Health. By B. ARTHUR WHITELEGGE, M.D. Seventh Thousand. London: Cassell & Co., Ltd. 1899. Pp. 588.

THE new edition of this excellent and popular handbook has all its statistics brought down to date. It contains information as to recent improvements in disinfectants, and deals fully with recent vaccination legislation, and practice. It is a thoroughly reliable and useful handbook.

B. Bradshaw's Dictionary of Bathing Places, Climatic Health Resorts, Mineral Waters, Sea Baths, and Hydro-pathic Establishments. London: Kegan Paul, Trench, Trübner, & Co., Ltd. 1899. Pp. 372.

THIS well known handbook purports to be kept accurate by annual revision. So far as the Irish entries are concerned there is need for further correction. It contains not only an alphabetical list, with particulars, of health resorts, &c., but has other useful chapters, such as that on how to reach each place, with the cost and time occupied. The good taste of the editor has not yet induced him to omit the “ Explanations and Translations of Technical Terms and Phrases.”

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

*Accidental Rupture of the Small Intestine.** By J. NASH.

J. S., aged twenty-seven, on the 16th inst. partook of a full meal of corned beef and cabbage about 3 o'clock, followed at 4 30 by some soup, bread, and other solids. He then went out to exercise on a horizontal bar. Whilst doing so, with his arms resting on the bar behind his back, he was about to raise himself up when his feet slipped and he fell forward on another bar lying close to the ground. This bar struck him above the junction of his epigastric and umbilical regions. The distance of the fall was about two feet. He immediately felt pain in his abdomen, became faint, and vomited. The vomit consisted of the contents of his stomach and showed no trace of blood.

The faintness soon passed off, but the pain persisted, and soon became more intense, being of a colicky nature. Some hours after he applied to the infirmary of the Mater Hospital, where he got two purgative pills and was poulticed over the abdomen. He took one of the pills, which was promptly rejected by the stomach, as was also some hot milk. The poultice relieved the pain somewhat, but the patient passed a very unquiet night. When seen by Dr. Blaney he stated he felt somewhat easier and had no pain except when he turned in bed. His aspect was good; pulse 120, small, hard, and wiry; temperature 101° F., and he was suffering from intense thirst. Examination of the abdomen showed it to be much distended and tympanic, with liver dulness almost completely abolished. There was an area of marked tenderness situated above the umbilicus. His bowels had not moved since the time of the accident (about 17½ hours), nor had he passed any flatus per anum. On considering his symptoms Dr. Blaney came to the conclusion that he had ruptured some part of his intestinal canal, probably somewhere in the neighbourhood of the duodenum, and suggested the patient's removal to hospital for immediate operation, which was agreed to.

* Read before the Medical and Scientific Society of the Catholic University Medical School, May 8, 1899.

The operation was begun about twenty-four hours after the accident. Ether having been administered, an incision was made about 7 inches long in the middle line round the left of umbilicus, and terminating at a level slightly below this. There was a very thick layer of subcutaneous fat and much subperitoneal fat also. When the peritoneum was opened the transverse colon immediately protruded; this was pulled down, and the stomach was examined, and was found to be normal. The omentum was then raised up, and the small intestine examined. On pulling out a few coils it was found that they were much distended. Tracing these in the direction of the distension caused a flow of a slightly turbid fluid, which was received on sponges, and several masses of whitish-yellow lymph were now seen adherent to and gluing together different coils of intestine. On gently separating these, a perforation was found on a portion of the jejunum lying to the left of the middle line, and apparently close to the duodenum. The small intestine all round showed here and there masses of whitish-yellow lymph, was much injected with blood, and greatly dilated, so much so that Mr. Lentaigue, who was standing by, remarked that "it looked more like large intestine than small." The rupture was transverse in direction, $\frac{3}{4}$ in. long, and running up to the termination of the mesenteric border. The mucous membrane was prolapsed into the aperture, which had a rounded outline.

Already well-marked peritonitis had set in, and the intestine had probably to a certain extent become paralysed. The margins of the rupture were washed with 1 in 20 carbolic, which was then flushed away with sterilised saline solution. A double row of Lembert sutures was inserted, and then the intestines and mesentery in the neighbourhood were flushed with saline solution. The wound was then closed. Three silver wire sutures, passing through the whole thickness of the abdominal wall, and including peritoneum were first inserted, and fishing-gut was used to approximate skin and muscle. A good deal of time was taken up by this, as the abdominal walls were very tense, and the intestines tended to protrude, and in addition the silver wire broke two or three times. Half an hour after the operation, when the effect of the ether had to a great extent passed off, his pulse was about 140, but otherwise he looked and felt well. He got a pint of hot saline solution by the rectum, which he retained, and a 7 min. hypodermic of strychnin. Otherwise his treatment consisted of occasional sips of hot water. At 6 o'clock that evening his temperature was 100° F.; pulse, 140; respiration, 40. He complained of the tightness of

the bandage and some slight pain in the wound. He was somewhat restless during the night, complained much of thirst; about 1 30 a.m. he vomited a large quantity (about two pints) of dark brown fluid. However, later on he was much improved—temperature, normal; pulse, 120; respiration, 34; he had no pain, and his aspect was extremely good. He had not vomited any more, and altogether seemed doing well; he had not, however, passed any flatus per anum. He continued fairly well during the next day, but about 6 o'clock temperature rose to 105° F.; pulse, 130; respiration, 32; it fell again to normal in a couple of hours. About 1 o'clock he again vomited about half a pint of dark brown fluid, and again at 5 o'clock about one ounce. Next morning he was still looking pretty well—temperature, 99°; pulse, 134; respiration, 31. As he had passed nothing per anum since the operation a turpentine enema was ordered; this brought away a considerable amount of formed fæces, emptying apparently the sigmoid flexure. Towards 4 o'clock he began to vomit, and the vomiting became more and more frequent, until at last it occurred every ten minutes. About 5 45 he was looking much worse—pulse, 140; vomiting frequently. The vomited matter regurgitated from the stomach without any effort on the part of the patient, appearing, according to him, to come from his throat; it was almost black in colour and of sour smell—the vomit of acute obstruction; temperature was 100°, and he complained of feeling very weak and exhausted by the vomiting. Dr. Blaney and Mr. Coppinger resolved, on consultation, to re-open the abdomen, as it was plainly evident that he was dying as it was. Accordingly about 7 he was again anæsthetised and the wound re-opened, the vomiting continuing during the operation. The intestines were in much the same condition as at the last operation; there was absolutely no fluid now in the peritoneum, but the intestines on the left side of the abdomen were much distended and adherent to each other; one place was slightly kinked, but the intestine was distended equally below as well as above the spot. On exposing the site of rupture it was found securely sealed. Tracing the intestine downwards towards the cæcum it was found to become gradually smaller and smaller till it reached its normal size. It was collapsed here, but otherwise looked healthy. It was decided that the symptoms depended on acute obstruction, owing to the paralytic distension of the small intestine. There was no more, or scarcely as much, peritonitis as at the first operation. To relieve the distension a trocar and canula were introduced into the distended

coil of intestine, and through the canula as much flatus as possible was emptied. Then a concentrated solution containing ʒi. of mag. sulph. was injected. The puncture was closed by Lembert's suture; there was nothing in the peritoneal cavity to wash away, but as a stimulant some hot saline solution was poured into the abdomen. The wound was then closed. The patient's pulse was very rapid and feeble during the operation. For some two or three hours subsequently he seemed to improve, the vomiting having ceased, but about 11 he began to vomit again. His pulse, which had slowed down to 140, became faster and faster, his temperature rose to 103°, and finally he died about 1 50. Just before death a gush of vomiting came on.

THE INFLUENZAL CHANGE OF TYPE OF ACUTE PNEUMONIA.

In the second edition of their *Manual of Bacteriology* (Edinburgh and London: Young J. Pentland) Drs. Muir and Ritchie observe:—"Up till 1889 acute catarrhal pneumonia was comparatively rare except in children. In adults it was chiefly found as a secondary complication to some condition such as diphtheria, typhoid fever, &c. Since the first recent great epidemic of influenza in the year named, however, it has been of much more frequent occurrence in adults, has assumed a very fatal tendency, and has presented the formerly quite unusual feature of being sometimes the precursor of gangrene of the lung. Moreover, not only has the prevalent type of pneumonia (the term being used in its widest sense) changed through the occurrence of a greater proportion of catarrhal cases, but it appears to be now more common to find cases which microscopically present a mixed type—i.e., in which both an acute croupous condition and an acute catarrh occur in the same lung." The above statements are entirely confirmatory of the clinical description of the pneumonia which so often presented itself as a complication of the epidemic influenza of 1889-90 in Dublin. In a paper upon that epidemic, published in the number of this Journal for April, 1890 (Vol. 89, page 315), Dr. J. W. Moore wrote as follows:—"The pneumonia, while producing the ordinary physical signs of acute croupous pneumonia, is often latent in its course, or accompanied by a profuse muco-purulent expectoration, with scarcely any rusty sputa. The ebbing of the strength in some of these cases in elderly people is something awful—it is often absolutely beyond control."

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—EDWARD H. BENNETT, M.D., F.R.C.S.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF OBSTETRICS.

President—F. W. KIDD, M.D.

Sectional Secretary—JOHN H. GLENN, M.D.

Friday, March 17, 1899.

DR. W. J. SMYLY in the Chair.

Exhibits.

DR. ALFRED SMITH exhibited three myomatous uteri removed by retro-peritoneal hysterectomy.

(1.) The first specimen was a large soft myoma which had been removed five days previously. The patient had given birth to two children, and after the birth of the younger child, who was now three years old, the uterus in repose came down to the size of a three months' uterus. The tumour, which was considerably œdematous, and blocked up the pelvis completely, extended well into the broad ligament.

(2.) The second specimen was a very small fibroid, which he removed on account of the constant trouble which it gave to the patient during micturition. On cutting through the pedicle there was no hæmorrhage, and he found that there was only one uterine artery developed to any extent, and that was on the left side. The absence of a uterine artery on the right side was the chief point of interest in this specimen.

(3.) The third specimen which he had removed a fortnight ago was large, and appeared to him before operation as sub-peritoneal and pedunculated. On operating, however, he found a second pedicle intimately adherent to the promontory of the sacrum, and this gave him considerable trouble until he found out the condition. He then attempted to perform a myomectomy. He put a clamp round the cervix in the ordinary way in order to suppress hæmorrhage from it, and then proceeded to amputate the large tumour which he exhibited. On loosening the ligature, however,

there was hæmorrhage everywhere. He tied several arteries, but notwithstanding this he could not arrest the hæmorrhage, so that he was obliged to perform hysterectomy. The patient did remarkably well.

DR. PUREFOY said that Dr. Smith's failure to find the uterine artery on one side was another illustration of the variations in size which one often observed in different cases in the uterine vessels. It was very difficult to forecast what the behaviour of a fibroid would be. There were some harder than others, and the rate of growth in these cases was comparatively slow. The difficulty Dr. Smith had in controlling the hæmorrhage in the case of myomectomy showed that one ought to be prepared for an emergency, even in the case of a tumour with a small pedicle. He suggested that tying the ovarian arteries might have had some effect in checking the hæmorrhage in this case.

DR. SMYLY suggested that the small tumour might have been better removed per vaginam.

DR. SMITH, replying, said there seemed to be a growing opinion that operation should be the treatment in the case of fibromata. He looked upon these cases as strong arguments in favour of operative treatment. The uncertainty of the prognosis was another point in favour of operation. As regards the shock of removal of the uterus by the retro-peritoneal method, his experience was that patients suffered more pain and distress after removal of the tubes and ovaries only than when they removed the tumour and the uterus down to the level of the cervix. With reference to Dr. Smyly's suggestion, the reason he removed the tumour from above was on account of the long pedicle attached to it making this easy.

SECTION OF PATHOLOGY.

President—J. M. PURSER, M.D.

Sectional Secretary—E. J. MCWEENEY, M.D.

Friday, 24th March, 1899.

PROF. E. H. BENNETT, M.D., President of the Academy, in the Chair.

Chronic (circumscribed) Abscess in Tibia (Brodie's).

MR. HENRY GRAY CROLY communicated several cases of Brodie's abscess, and exhibited portions of bone removed by a small trephine and drawings of the cases; the bones were much thickened and diseased.

CASE I. occurred in a young man, in the lower end of the tibia, admitted into the City of Dublin Hospital. The patient suffered from severe pain confined to a small spot about four inches above the ankle-joint. All treatment, constitutional and local, failed to give relief. Mr. Croly trephined the tibia at the most painful part; a small quantity of pus escaped. The patient got immediate relief and made a rapid recovery.

CASE II.—A young lady, residing in the South of Ireland, suffered from pain at the junction of the middle and lower third of the tibia for about sixteen years. The pain at times was excruciating; she got relief occasionally. All treatment having failed, amputation was proposed and refused. She came to Dublin. Mr. Croly trephined the tibia. A small quantity of pus escaped. The bone was very hard and thickened. The patient made a perfect recovery.

CASE III.—A young man, at present in the City of Dublin Hospital, suffered for ten years from very severe pain in the lower third of the right tibia. An incision was made through the periosteum some months previous to his coming under Mr. Croly's care. The symptoms were not relieved. There was thickening of the bone above the ankle-joint. Mr. Croly trephined, and about two drachms of healthy pus escaped as the portion of bone was being removed. The wound healed rapidly, and the patient got immediate and permanent relief.

CASE IV.—A young girl, at present in the City of Dublin Hospital, suffered for over three years from severe and constant pain in the upper third of the right tibia. She was operated on by a surgeon, but got no relief. Mr. Croly trephined the tibia. The portion of bone was diseased, and there was considerable thickening and density of the tibia. There were two œdematous and pouting granulations at the part affected. The patient got instant relief from pain.

MR. E. H. BENNETT said it was interesting to note that these abscesses were not confined to the epiphyses, as described by Brodie. He believed that they had nothing to do with tubercular disease of the bone, owing to their great chronicity, and the fact that they are relieved by emptying.

MR. T. MYLES said that he had very recently operated on a boy for Brodie's abscess in the upper end of the tibia. He had operated on him three years previously for Brodie's abscess, and the boy went home well. He came back to him a few days ago with a superficial abscess over the site of the original Brodie's abscess, and operation showed that there had been no attempt whatever at the production of new bone in the cavity, and there was simply a

mass of granulation. Another case on which he operated was remarkable in its recovery in that the skin dipped down into the recess, and patient had now a pocket extending backwards an inch in depth into the tibia. He presumed that the insufficiency of the new bony growth was due to the non-vascularity of the extremely dense tissue, and that there was not room for the blood vessels to expand. He thought that the explanation of the alleged frequency of this condition in the tibia was that the disease was not recognised when occurring in other situations. Probably many cases of tubercular disease of the knee-joint began as a tubercular process in the layer of bone immediately underlying the cartilage of the tibia.

DR. KNOTT had seen Mr. Croly's case in hospital, and could bear testimony to the prolonged and intermittent character of the pain. In Brodie's cases, there was no external appearance that could lead to a suspicion of what the nature of the disease was.

MR. T. E. GORDON had a case recently. Patient, forty-five years of age, had a very marked swelling of the upper third or more of the tibia, and a sinus led down to this part of the bone. History was that patient had first noticed a swelling after an injury received twenty or thirty years previous. About twelve years ago a sinus had formed and closed, and a second formed and closed, but a third sinus which formed persisted. A thick layer of dense bone was chiselled through with difficulty, and a large abscess found in the bone.

MR. CROLY, in reply to Mr. Myles, said that he had not meant to convey that circumscribed abscess of bone was confined to the tibia, but it was met much more frequently there. He could not see any analogy between a cartilage erosion and sub-cartilage trouble as described by Barnwell, who believed that the disease did not begin in the cartilage or bone, but in the cartilage under the bone. He had cut out the head of the humerus, but it bore absolutely no analogy to circumscribed abscess of the tibia. Tubercular disease of the knee-joint had nothing to say to the condition.

Enteric Fever fatal through Embolic Hemiplegia.

DR. J. W. MOORE reported a case of this disease. [It will be found in Vol. CVII., page 350.]

DR. E. J. McWEENEY asked Dr. Moore how he accounted for the coagulation of the blood in the left side of the heart by myocardial changes. Apart from some endocardial change, it was not

clear how he accounted for the formation of the thrombus. Was a microscopic examination of the spleen made with a view to discovering the typhoid bacillus? Was the sero-diagnostic test applied during life? Regarding cerebral implication in the course of general infective diseases, a most remarkable case which had come under his notice was that of a late distinguished Fellow of that Academy, in whose case the pneumococcus of Fraenkel became localised in the meninges after the morbid process to which it gave rise had been successfully overcome in the lung. He had seen a case of typhoid fever last winter, in which the symptoms which prevailed during the entire course of the attack were indistinguishable from meningitis, and the real nature of the case was only ascertained by Widal's reaction.

DR. R. TRAVERS SMITH asked Dr. Moore if a microscopic examination of the myocardium had been made, and did it exhibit parenchymatous or fatty degeneration? Was it from clinical or *post-mortem* experience that he had made the statement that enteric fever is one of the fevers which most profoundly affects the myocardium?

DR. J. W. MOORE, in reply to Dr. McWeeney, said that the endocardium was perfectly healthy, and in it there was nothing to account for the *ante-mortem* clotting. He attributed the clotting to the extremely feeble action of the heart which existed for the last ten or twelve hours of life. The spleen was not examined for Eberth's bacillus. Widal's reaction was positive. In reply to Dr. Smith, he said that in speaking of profound changes of the heart he was speaking generally and not with regard to the present case, in which no minute examination of the heart muscle was made. Cardiac failure not infrequently did lead to death in enteric fever. He spoke solely from clinical experience on the subject.

Primary Carcinoma of Liver, with Enormous Enlargement of Spleen.

DR. D. F. RAMBAUT exhibited specimens.

Gall-stones with Multiple Abscess of Liver and Carcinoma of the Bladder.

THE SECRETARY (Prof. McWeeney) showed this specimen, which was the liver of a woman, aged nearly seventy, who suffered from severe and persistent jaundice for several months before death, and was thought to have cancer of the liver. *Post mortem* the organ was not much enlarged (weighed 60 oz.), and was studded on the surface and throughout with hundreds of small abscesses, varying in size

from a pin's head to a hazelnut, and containing a greenish pus, thick and inodorous. The larger bile ducts were greatly dilated and contained an inspissated bile mingled with soft gritty concretions. The common bile duct was large enough to hold the little finger, and contained several crumbling calculi, one of which quite blocked the passage into the duodenum. Of gall bladder there was no trace, its position being occupied by a solid white nodule about the size of a walnut, to which the duodenum was firmly adherent. On microscopic examination this proved to have the structure of adeno-carcinoma, and a gradual transition from normal bile duct to carcinoma structure could be distinctly traced in the sections. There was no trace of the wall of the gall bladder to be detected with the microscope. The hepatic duct ran into this nodule, and the common bile duct ran from it to the duodenum. The cystic duct seemed to be represented by a solid cord about $\frac{1}{8}$ in. in diameter, consisting of cancerous tissue. The wall of the numerous small abscesses was composed of flattened layers of hepatic cells, which gradually became necrotic as the abscess was approached. The abscesses were not demonstrably contained in the bile ducts, or associated with the portal vein. They contained two varieties of *Bacillus coli*, distinguished by their appearance on gelatine plates and on potato. Both were highly virulent for animals (rabbits), and produced abundance of indol. The autopsy was made a few hours after death, so that *post-mortem* immigration need not be assumed. Exhibitor was inclined to look upon the organisms as the primary ætiological factor, then came the calculi and finally the conversion of the gall bladder into a solid mass of neoplasm.

DR. EUSTACE asked, with reference to Dr. Rambaut's specimen, if there was any evidence of collateral circulation in the spleen.

DR. LITTLEDALE thought that there was no doubt about Dr. Rambaut's specimen being one of primary cancer, as the normal liver tissues could be actually seen undergoing transformation into cancerous tissue. He thought that liver abscesses, in Professor McWeeney's case, resembled kidney abscesses in that in the case of the kidney it has been stated that when *Bacterium coli* is found in the urine with symptoms of pain about the kidney, it was a pretty certain sign of stone in the kidney, and it has been said that the presence of the stone in the kidney allows the *Bacterium coli* to get through the abraded membrane of the pelvis of the kidney.

DR. J. W. MOORE said that the enlargement of the spleen in Dr. Rambaut's case was most interesting and very unusual in carcinoma of the liver. There must have been very considerable

pressure on the portal vein to cause the condition. The bacteriological origin of gall-stones was very interesting. It has been observed that patients recovering from typhoid fever have become subject to gall-stones, and probably it is really a manifestation of the localisation of Eberth's bacillus producing a deposition of cholesterine and lime salts.

DR. KNOTT asked if there was a large quantity of ascitic fluid in Dr. Rambaut's case.

DR. RAMBAUT, in reply to Dr. Eustace, said that there was a varicose condition of the gastric and œsophageal veins, and also the veins behind the peritoneum. In *asylum post-mortems*, only about one-twelfth of the cases of cancer of liver were primary. Perhaps the cirrhosis of the liver would account for the portal obstruction in this case. With reference to Dr. McWeeney's case he said that he had lately made a *post-mortem* examination on a woman who died of consumption, and found four abscesses in the liver. From the pus obtained he got almost a pure culture of *Bacterium coli*.

DR. MCWEENEY, in reply, said that he had lately seen a very large kidney completely riddled with small abscesses containing a creamy pus which contained one organism only—the *Bacillus coli* in prodigious numbers, and they could be seen easily filling up the urinary tubules. Without doubt the process had penetrated from the pelvis through the papillæ along the straight tubules, and had excited suppuration from the interior of the urinary tubules outwards. The same thing is constantly found in what are unjustly called "surgical" kidneys. In cases of typhoid fever, it was his experience to find Eberth's bacillus invariably present in the gall bladder. Cases are on record where, in cases of typhoid fever, the typhoid bacillus was found twenty years afterwards in the gall bladder. In fact, the bile seemed to be an ideal medium for the long preservation of the life of various pathogenic species of bacteria.

Peculiar Clot from a Case of Epistaxis.

DR. NINIAN FALKNER reported the following case—M. C., aged seventy-six years, suffered from a chronic cough; was a native of Birr, King's County; a dressmaker; a widow; had eight children, one living. On Sunday, 27th March, 1898, when coughing, blood commenced to flow from mouth and nose, and continued intermittently until 29th March, 1898, when with a severe fit of coughing, accompanied by a feeling of suffocation, the clot was coughed up. The bleeding ceased, but patient sank and

died April 11th, 1898. The clot, which he was unable to break down with a spoon, is evidently a cast of the posterior nares, with a process about 8 inches in length, which probably extended down into the œsophagus; it is composed entirely of blood-clot and contains no organised tissue.

DR. MCWEENEY regarded Dr. Falkiner's explanation of the cases of rhinoliths as, at any rate, extremely suggestive.

THE WILLIAM F. JENKS MEMORIAL PRIZE.

DR. JAMES V. INGHAM, Secretary of the Trustees of the College of Physicians of Philadelphia, informs us that the Fifth Triennial William F. Jenks Memorial Prize of Five Hundred Dollars, under the deed of trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "The Various Manifestations of Lithæmia in Infancy and Childhood, with the Etiology and Treatment." The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with Obstetrics, or the Diseases of Women, or the Diseases of Children;" and that "the trustees, under this deed for the time being, can, in their discretion, publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may, in their judgment, be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia." The prize is open for competition to the whole world, but the essay must be the production of a single person. The essay, which must be written in the English language, or if in a foreign language, accompanied by an English translation, must be sent to the College of Physicians of Philadelphia, Pennsylvania, U.S.A., before January 1, 1901, addressed to Richard C. Norris, M.D., Chairman of the William F. Jenks Prize Committee. Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year. The Committee reserves the right not to make an award if no essay submitted is considered worthy of the prize.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D. Univ. Dubl. ;
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VITAL STATISTICS

For four Weeks ending Saturday, June 17, 1899.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Aver- age Rate for 4 weeks	Towns, &c.	Week ending				Aver- age Rate for 4 weeks
	May 27	June 8	June 10	June 17			May 27	June 8	June 10	June 17	
23 Town Districts	23.1	22.4	21.5	21.1	22.0	Limerick -	28.9	12.6	8.4	5.6	12.6
Armagh -	0.0	21.4	7.1	14.3	10.7	Lisburn -	21.3	29.8	17.0	29.8	24.5
Ballymena	22.5	22.5	45.1	39.5	32.4	Londonderry	26.7	23.6	22.0	40.8	28.3
Belfast -	21.8	23.1	20.6	20.6	21.5	Lurgan -	27.4	27.4	18.2	18.2	22.8
Carrickfergus	5.8	17.5	0.0	23.4	11.7	Newry -	20.1	20.1	12.1	28.2	20.1
Clonmel -	48.7	14.6	34.1	0.0	24.3	Newtownards	17.0	11.3	34.0	17.0	19.8
Cork -	21.5	26.3	18.0	20.8	21.7	Portadown -	18.6	18.6	12.4	12.4	15.5
Drogheda -	22.8	11.4	22.8	7.6	16.2	Queenstown	11.5	11.5	17.2	23.0	15.8
Dublin -	25.8	21.5	24.5	20.6	23.1	Sligo -	30.5	20.3	5.1	15.2	17.8
(Reg. Area)						Tralee -	11.2	22.4	11.2	22.4	16.8
Dundalk -	12.6	4.2	37.7	16.8	17.8	Waterford -	25.9	25.9	29.8	29.8	27.8
Galway -	15.1	37.8	26.4	41.5	30.2	Wexford -	13.5	31.6	27.1	22.6	23.7
Kilkenny -	28.3	51.9	14.2	28.3	30.7						

In the week ending Saturday, June 17, 1899, the mortality in thirty-three large English towns, including London (in which the rate was 15.1), was equal to an average annual death-rate of 16.5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17.9 per 1,000. In Glasgow the rate was 17.6. In Edinburgh it was 17.0.

The average annual death-rate represented by the deaths registered during the same week in the Dublin Registration Area and in the twenty-two principal provincial Urban Districts of Ireland was 21·1 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,058,188.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·3 per 1,000, the rates varying from 0·0 in thirteen of the districts to 16·9 in Ballymena—the 7 deaths from all causes registered in that district comprising 2 from measles and one from whooping-cough; the Registrar remarks—“A severe epidemic of measles prevails in the town and neighbourhood several deaths. The disease is so general and has spread so rapidly that I expect it will soon exhaust itself.” Among the 138 deaths from all causes registered in Belfast are 9 from measles, 4 from whooping-cough, 6 from enteric fever, and 5 from diarrhœa. The 26 deaths in Londonderry comprise one from measles and 2 from diarrhœa.

In the Dublin Registration Area the births registered during the week amounted to 217—105 boys and 112 girls; and the deaths to 144—80 males and 64 females.

The deaths, which are 21 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 21·5 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the area, the rate was 20·6 per 1,000. During the twenty-four weeks ending with Saturday, June 17, the death-rate averaged 28·5, and was 1·1 under the mean rate for the corresponding portions of the ten years 1889-1898.

The number of deaths from zymotic diseases registered during the week was 18, being equal to the average for the corresponding week of the last ten years, but 2 under the number for the previous week. The 18 deaths comprise one from measles, one from scarlet fever (scarlatina), 5 from influenza and its complications, 4 from whooping-cough, one from enteric fever, and 4 from diarrhœa.

The cases of measles admitted to hospital amounted to 28, against 3 in the preceding week; 3 measles patients were discharged, one died, and 30 remained under treatment on Saturday, being 24 over the number in hospital on Saturday, June 10.

The number of cases of scarlatina admitted to hospital was 7, being 12 under the admissions in the preceding week, 10 patients were discharged, and 75 remained under treatment on Saturday, being 3 under the number in hospital on the previous Saturday. There were, in addition, 11 convalescents from this disease under

treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

As in the preceding week, 17 cases of enteric fever were admitted to hospital; 12 patients were discharged, one died, and 57 remained under treatment on Saturday, being 4 over the number in hospital at the close of the preceding week.

The hospital admissions for the week included, also, 4 cases of diphtheria; 19 cases of this disease remained under treatment in hospital on Saturday.

Twenty-five deaths from diseases of the respiratory system were registered, being 2 over the average for the corresponding week of the last ten years, and also 2 over the number for the previous week. They consist of 10 from bronchitis, 13 from pneumonia, and 2 from pleurisy.

VITAL STATISTICS

For four weeks ending Saturday, July 15, 1899.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Weeks ending				Average Rate for 4 weeks	Towns, &c.	Weeks ending				Average Rate for 4 weeks
	June 24	July 1	July 8	July 15			June 24	July 1	July 8	July 15	
23 Town Districts	19.6	20.3	19.6	21.1	?	Limerick -	16.8	36.5	9.8	4.2	16.8
Armagh -	28.5	0.0	28.5	21.4	19.6	Lisburn -	25.7	21.3	12.8	12.8	18.2
Ballymena	16.9	16.9	28.2	22.5	21.1	Londonderry	23.6	31.4	17.3	7.9	20.1
Belfast -	18.0	17.4	20.4	21.5	18.3	Lurgan -	31.9	18.2	18.2	31.9	25.0
Carrickfergus	17.5	11.7	0.0	5.8	8.8	Newry -	16.1	4.0	20.1	20.1	15.1
Clonmel -	19.5	9.7	4.9	29.2	15.8	Newtownards	11.3	22.7	28.3	34.0	24.1
Cork -	23.5	17.3	18.0	23.5	20.6	Portadown	24.7	6.2	18.6	18.6	17.0
Drogheda -	3.8	26.6	?	?	?	Queenstown	11.5	17.2	5.7	11.5	11.5
Dublin - (Reg. Area)	20.7	22.2	22.4	25.1	22.6	Sligo -	35.5	20.3	10.2	25.4	22.8
Dundalk -	12.6	29.3	16.8	4.2	15.7	Tralee -	22.4	33.6	28.0	0.0	21.0
Galway -	11.3	15.1	22.7	15.1	16.1	Waterford	15.9	25.9	13.9	19.9	18.9
Kilkenny -	42.5	23.6	14.2	9.4	22.4	Wexford -	18.5	9.0	9.0	22.6	13.5

In the week ending Saturday, July 15, 1899, the mortality in thirty-three large English towns, including London (in which the rate was 15·9), was equal to an average annual death-rate of 16·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 16·7 per 1,000. In Glasgow the rate was 17·1. In Edinburgh it was 17·2.

The average annual death-rate represented by the deaths registered during the same week in the Dublin Registration Area and in the twenty-two principal provincial Urban Districts of Ireland was 21·1 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,039,480. This number is exclusive of the population of Drogheda, in one district of which, owing to alterations in boundaries, registration was suspended during the last fortnight.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in nineteen of the districts to 3·3 in Belfast—the 144 deaths from all causes registered in that city comprising 3 from measles, 1 from scarlatina, 3 from whooping-cough, 1 from diphtheria, 8 from enteric fever, and 6 from diarrhoea.

In the Dublin Registration Area the births registered during the week amounted to 185—106 boys and 79 girls; and the deaths to 173—94 males and 79 females.

The deaths, which are 31 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·8 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the area, the rate was 25·1 per 1,000. During the twenty-eight weeks ending with Saturday, July 15, the death-rate averaged 27·8, and was 0·7 under the mean rate for the corresponding portions of the ten years 1889–1898.

Twenty-five deaths from zymotic diseases were registered during the week, being 6 in excess of the average for the corresponding week of the last ten years, and 5 over the number for the previous week. They comprise 7 from measles, 4 from whooping-cough, 3 from diphtheria, 1 from enteric fever, 1 from infantile cholera, 5 from diarrhoea, and 1 from erysipelas.

The number of cases of measles admitted to hospital was 39, being 5 under the admissions in the preceding week, but 9 over the number in the week ended July 1. Seventeen measles patients were discharged, 2 died, and 105 remained under treatment on Saturday,

being 20 over the number in hospital at the close of the preceding week.

As in the week preceding, 13 cases of scarlatina were admitted to hospital; 17 patients were discharged, and 54 remained under treatment on Saturday, being 4 under the number in hospital on that day week. There were, in addition, 18 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Ten cases of enteric fever were admitted to hospital, against 8 in the preceding week. Six patients were discharged, 1 died, and 53 remained under treatment on Saturday, being 3 over the number in hospital on the previous Saturday.

The hospital admissions for the week included, also, 6 cases of diphtheria (an excess of 2 as compared with the admissions in the preceding week), and 1 case of typhus. Seven cases of the former and 8 of the latter disease remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered was 20, being 1 under the average for the corresponding week of the last ten years, and 4 under the number for the previous week. The 20 deaths consisted of 12 from bronchitis, 7 from pneumonia, and 1 from croup.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of June, 1899.

Mean Height of Barometer, -	-	-	30·071 inches.
Maximal Height of Barometer (9th, at 9 a.m.),			30·466 „
Minimal Height of Barometer (20th, at 9 a.m.),			29·392 „
Mean Dry-bulb Temperature,	-	-	60·5°.
Mean Wet-bulb Temperature,	-	-	56·4°.
Mean Dew-point Temperature,	-	-	52·9°.
Mean Elastic Force (Tension) of Aqueous Vapour,			·402 inch.
Mean Humidity, -	-	-	77·0 per cent.
Highest Temperature in Shade (on 11th),	-		74·4°.
Lowest Temperature in Shade (on 19th),	-		45·9°.
Lowest Grass Temperature (Radiation) (on 19th),			40·9°.
Mean Amount of Cloud, -	-	-	43·7 per cent.
Rainfall (on 8 days), -	-	-	1·643 inches.
Greatest Daily Rainfall (on 20th), -	-	-	·903 inch.
General Directions of Wind, -	-		N.E., N.W., W.

Remarks.

June, 1899, was a fine, warm, and sunny month. In and near Dublin it was rainless until the 17th, when an absolute drought of 23 days' duration was broken by a genial fall of rain. On the 20th a heavy downpour took place, the measurement exceeding $1\frac{1}{2}$ inches at the Co. Wicklow stations. A severe thunderstorm early on the morning of the 28th brought 1·420 inches of rain to Grey-stones, 1·087 inches to the Consumption Hospital at Newcastle, but only ·240 inch to Dublin. At the close of the month the weather fell into a broken, rainy, chilly condition. In Dublin the mean amount of cloud during the month was as low as 43·7 per cent., only one-third of the sky on the average being covered at 9 p.m.

In Dublin the arithmetical mean temperature ($61\cdot3^{\circ}$) was above the average ($57\cdot8^{\circ}$) by $3\cdot5^{\circ}$; the mean dry-bulb readings at 9 a.m. and 9 p.m. were $60\cdot5^{\circ}$. In the thirty-four years ending with 1898, June was coldest in 1882 (M. T.= $55\cdot8^{\circ}$) and in 1879 ("the cold year") (M. T.= $55\cdot9^{\circ}$). It was warmest in 1887 (M. T.= $62\cdot3^{\circ}$); in 1865 (M. T.= $61\cdot0^{\circ}$); and in 1896 (M. T.= $61\cdot4^{\circ}$).

The mean height of the barometer was 30·071 inches, or 0·154 inch above the corrected average value for June—namely, 29·917 inches. The mercury rose to 30·466 inches at 9 a.m. of the 9th, and fell to 29·392 inches at 9 a.m. of the 20th. The observed range of atmospheric pressure was, therefore, 1·074 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was $60\cdot5^{\circ}$, or $9\cdot5^{\circ}$ above the value for May, 1899. Using the formula, *Mean Temp.* = *Min.* + (*max.*—*min.* \times ·465), the value was $60\cdot8^{\circ}$, or $3\cdot6^{\circ}$ above the average mean temperature for June, calculated in the same way, in the twenty-five years, 1865–89, inclusive ($57\cdot2^{\circ}$). The arithmetical mean of the maximal and minimal readings was $61\cdot3^{\circ}$, compared with a twenty-five years' average of $57\cdot8^{\circ}$. On the 11th the thermometer in the screen rose to $74\cdot4^{\circ}$ —wind, N.E.; on the 19th the temperature fell to $45\cdot9^{\circ}$ —wind, N.W. The minimum on the grass was $40\cdot9^{\circ}$ on the 19th.

The rainfall amounted to 1·643 inches on only 8 days. The average rainfall for June in the twenty-five years, 1865–89, inclusive, was 1·817 inches, and the average number of rainy days was 13·8. The rainfall, therefore, was slightly below, while the rainy days were far below, the average. In 1878 the rainfall in June was very large—5·058 inches on 19 days; in 1879, also, 4·046 inches fell on 24 days. On the other hand, in 1889 only ·100 inch was measured on 6 days; in 1887 the rainfall was

only .252 inch, distributed over only 5 days. In 1898 1.547 inches fell on 14 days.

High winds were noted on only 3 days, and the force of a gale was on no occasion attained. The atmosphere was foggy on the 22nd. Solar halos were seen on the 3rd and 19th. Temperature reached or exceeded 70° in the screen on 14 days, compared with 17 days in 1887, only 1 day in 1888, and 4 days in 1898. A thunderstorm occurred on the 28th, and lightning was seen on the 17th. Hail fell on the 28th.

The rainfall in Dublin during the six months ending June 30th amounted to 11.295 inches on 95 days, compared with 12.115 inches on 98 days in 1898, 13.950 inches on 113 days in 1897, 7.854 inches on 84 days in 1896, 12.282 inches on 80 days in 1895, 14.361 inches on 109 days in 1894, 9.624 inches on 78 days in 1893, 11.770 inches on 97 days in 1892, 8.748 inches on 77 days in 1891, only 6.741 inches on 67 days in 1887, and a twenty-five years' average of 12.313 inches on 95.4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 4.085 inches distributed over 9 days. Of this quantity 1.520 inches fell on the 20th, and 1.420 inches on the 27th. The total fall since January 1 has been 19.510 inches on 95 days compared with 13.500 inches on 88 days in the first six months of 1898, 18.125 inches on 106 days in those of 1897, 7.356 inches on 61 days in the same period of 1896, 14.270 inches on 67 days in 1895, 17.381 inches on 96 days in 1894, and 11.776 inches on 75 days in 1893.

The rainfall at Cloneevin, Killiney, Co. Dublin, amounted to 2.47 inches on 10 days. The greatest fall in 24 hours was 1.30 inches on the 20th. The average rainfall for June in the 14 years, 1885-1898, was 1.700 inches on 12.5 days. In 1897, 3.59 inches fell on 20 days, in 1898 2.03 inches fell on 15 days. Since January, 1899, 13.62 inches of rain have fallen at this station on 89 days, compared with 13.10 inches on 97 days in the corresponding six months of 1898.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 3.748 inches on 8 days, compared with 2.459 inches on 14 days in June, 1898, and 4.078 inches on 15 days in June, 1897. On the 20th, 1.682 inches were measured, and on the 27th, 1.087 inches. The maximum temperature in the shade was 70.3° on the 6th, the minimum temperature in the shade was 42.0° on the 19th. At this station the rainfall for the six months ending June 30 amounted to 18.639 inches on 91 days, compared with 14.918 inches on 88 days in the same period of 1898, and 18.372 inches on 102 days in that of 1897.

PERISCOPE.

THE INJECTION OF SALINE SOLUTIONS IN COLLAPSE.

THE use of intravenous injections at blood heat of sterilised water, containing salts of sodium or potassium to prevent coagulation, has placed a simple and powerful means at the surgeon's disposal for the treatment of collapse from hæmorrhage, &c. The older method of transfusion of blood was limited by conditions which could not always be promptly fulfilled, and its results were by no means reliable or dependable. On the other hand, many remarkable results are recorded in which saline injections have been employed, and the treatment is admirably adapted for use in emergencies owing to its simplicity and to the fact that no complicated apparatus is required. The use of saline solutions is based upon the conclusions of Dr. Wm. Hunter that the immediate source of danger from sudden loss of blood is the rapid fall in blood pressure; that the value of transfused blood is almost solely physical and dependent on its volume; and that all its advantages can be more readily and more safely obtained by the use of simple saline solutions. The method of application varies in the hands of different practitioners and with the circumstances of the case. In some instances it will suffice to inject two or three pints into the rectum, whilst in extreme conditions it is necessary to open up a vein and inject the saline solution directly therein. If the latter method is adopted, means must be taken to prevent the injection of air into the venous system. The following paragraph, extracted from the *Lancet* of Nov. 26th, 1898, describes the method adopted to W. Thelwall Thomas, Esq., F.R.C.S., Eng., of the Royal Infirmary and University College, Liverpool:—"The apparatus generally used by me consists of a glass syringe (capacity 4 oz.), 2 feet of rubber tubing, and a curved metal canula to fit a vein of the size of the median basilic vein. The piston is withdrawn and the whole apparatus filled with salt solution before fitting the canula into the vein, to prevent, of course, entrance of air into the venous system. The canula is tied into the vein selected and the syringe is elevated; if the fluid does not run in quickly enough the piston is inserted and the solution is forced in. A finger-and-thumb clamp on the tubing at the nozzle of the

syringe enables the syringe to be withdrawn, filled again, and reapplied, and so on until enough fluid has been forced in. I have used a Higginson's syringe as the motive power." The writer proceeds to illustrate the value of the treatment by quoting three cases in which it was successfully employed. The first, a case in which the internal jugular vein was cut clean through, the common carotid cut into, and the external and anterior jugular veins were divided; the second, one in which there was collapse from secondary hæmorrhage after amputation of the leg and thigh; and the third, that of a patient who was in a critical condition from loss of blood consequent on a railway accident, followed by amputation of the crushed leg and thigh. In describing the effects of saline injections the same authority says that normal saline solution promptly injected into the venous system will wash up the stranded corpuscles and give the heart something to contract upon—liquid within—its normal stimulus, and enable the circulation to be carried on and the oxygenation of the red blood-cells to proceed. If the patient be not too old, manufacture of new blood goes on rapidly, and in a few hours the change produced is little short of marvellous, and anyone for the first time seeing a patient saved, even when apparently at his last gasp, will be astonished at the effect.

PHLEGMASIA DOLENS IN TYPHOID FEVER.

PHLEGMASIA dolens is rare in typhoid fever; Murchison estimated its incidence as 1 per cent. In an interesting lecture published in the *Boston Medical and Surgical Journal* of March 23rd Dr. Da Costa states that among 215 cases of typhoid fever in soldiers admitted into Pennsylvania Hospital phlegmasia dolens occurred in no less than 30, or 14 per cent. The general proportion of cases with this complication in the hospital is not more than 1 or 2 per cent. In 18 cases under the care of Dr. Da Costa the left leg was affected in three, the right in two, and both legs in 13. He explains the frequency of the complication in soldiers by predisposition from distension of the veins of the legs in marching. But excepting some from Porto Rico most of the soldiers came from training camps where marching was not excessive though more than men just come from civil life were accustomed to. The gravity of the infection also was important, for nearly all the cases occurred in those in whom the fever had been severe. This complication occurred mostly at the end of the fever or during convalescence. The earliest

symptoms are increased temperature and pain in the limb. Chills sometimes precede it. The pain is usually associated with tenderness, which first shows itself in the calf. Swelling is generally obvious, especially below the knee. The limb is tense and hard, though there may be some pitting around the ankles and calf. The skin is pale or white, but here and there an erythematous blush or even a small ulcer is seen. The veins may be prominent or not, tender or not. Those most usually affected are the internal saphenous and femoral, especially at their junction; sometimes the affection extends to the iliac veins and even to the vena cava. As to the pathology Dr. Da Costa regards the complication as primarily thrombosis, which afterwards may or may not be complicated by phlebitis or periphlebitis. As a rule the thrombus gradually disappears without serious symptoms, and the phlebitis, if present, slowly yields, or an adhesive inflammation results, and a collateral venous circulation is established. But cases have been recorded in which pyæmia or fatal embolism occurred. In a case observed by Dr. Da Costa death resulted from embolic pneumonia. Gangrene is an occasional result. Recovery is slow, and the leg may remain swollen for months, or readily become so after exercise. The dilated superficial veins may show how much the circulation has been interfered with, and adhesive inflammation may leave the saphenous or femoral vein hard and cord-like. The treatment consists in elevating the leg to assist the circulation, and in applying heat and bandaging to relieve the pain. A fomentation of equal parts of hot lead lotion and laudanum gives the most relief. Constipation, if present, must be treated. If the pain is persistent, belladonna plaster in strips, or belladonna ointment, applied along the vein is often useful. When the patient leaves his bed the limb should be well bandaged, which must be continued, or an elastic stocking must be used for a long time, until the veins recover their tone and until symptoms of obstruction have disappeared.—*Lancet*, May 20, 1899.

TUBERCLE OF THE TESTICLE IN CHILDHOOD.

THE *Journal de Clinique et de Thérapeutique Infantiles* of May 4th contains a report of M. Felizet's observations on 58 cases of tubercle of the testicle in childhood. From these it appears that the disease almost invariably attacks this organ in children under seven years of age. As in adults, the epididymus is by far its most usual place of origin, the cord is less often invaded, the prostate, the vesiculæ seminales, and the bladder

still less frequently. Hydrocele is rarely present, and the course of the disease, as might be expected in tissues which are virtually embryonic, is often rapid, infection proceeding not only by the spermatic blood-vessels but by the inguino-iliac lymphatics also. M. Felizet is not an uncompromising advocate for castration as a remedy, but is disposed up to a certain point to rely on hygienic and medicinal measures. Even when there is adhesion of the testicle to the scrotum and subsequent abscess formation he is content to employ local conservative methods. When, however, in addition to suppuration there are present the signs of general impairment of health he advocates immediate removal of the gland as the only means of preventing a very rapidly fatal form of general tuberculosis. Unfortunately, we are not informed of the results obtained by treatment in these 58 cases. If they should hereafter be forthcoming they ought materially to aid a decision as to the true indications for castration in the infantile variety of this disease. M. Felizet contends that the condition of rapid tissue development is not favourable to the resistance of an infective process, and in that case the stage of hygienic treatment and local conservative surgery must be a period of watchful care and not be too prolonged. Many authorities consider that in the adult excision of the testicle offers the best hope of cure, and we are still in want of proof to show that the case of children is materially different.—*Lancet*, May 20, 1899.

THE USELESSNESS OF GARGLES.

SÆNGER (*Münch. med. Woch.*, Feb. 21, p. 250) has experimented with a view to settling the vexed question of the value of gargling. If the tonsils be painted with methylene blue, and pure water be used as a gargle, it returns in the great majority of cases perfectly clear. If coloured at all, this is due to the air expired during gargling, spraying some of the blue forwards on to the tongue, and not to the water coming in contact with the tonsils. In the same way if starch powder be insufflated on to the anterior surface of the soft palate, the root of the tongue, and the tonsils, and immediately afterwards a dilute solution of glycerine of iodine in water be used as a gargle, that on the tongue and velum is coloured blue, while that on the tonsils is unaffected. The writer admits that if coloured fluids are used as gargles, the posterior pharyngeal wall and the tonsils are frequently stained, but explains this as being due not to actual contact of the gargle with the parts, but

to an infinitesimal fraction of it trickling downwards while the head is retracted. Accordingly as the fluid employed never penetrates behind the anterior pillars of the fauces, gargles are useless in affections of the pharynx and tonsils. Another reason for abandoning them is that they are commonly used in acute affections, though the act of gargling calls into activity the inflamed fauces and soft palate, though like all other inflamed parts they require rest. He recommends as a substitute that the parts should be painted, not in the usual way by rubbing the fluid in with a camel's hair brush, but by dabbing it on with a pad of cotton wool fastened to a holder. He says patients quickly learn to do this themselves.—*Med. and Surg. "Review of Reviews."*

LOCAL TREATMENT OF PSORIASIS.

MR. HUTCHINSON'S favourite prescription (*Archives of Surg.*, vol. i., p. 72) is:—*R.* Acid. chrysophanic., gr. x.; liq. carbonis deterg. (Wright's), m. x.; hyd. amm. chlorid., gr. x.; adip. benzoat $\frac{3}{4}$; *M.* Fiat unguent. The patient is to remove all scales as far as possible by washing or a warm bath, and to spend half an hour in rubbing the ointment into all patches. It is better to leave the ointment on all night, but if this is too disagreeable it may be wiped off (not washed). In the morning a bath with soap is taken. In most cases he prescribes arsenic also, but he relies chiefly on the ointment, and sometimes uses it alone. The tar solution materially prevents staining. With perseverance relapses become slighter and slighter and the intervals longer.—*Med. and Surg. "Review of Reviews."*

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

"Soloid" Saline Solutions for Intravenous Injections.

IN order to provide a convenient means of preparing normal saline solutions for intravenous injections in cases of collapse from hæmorrhage and other conditions, "Soloid" Saline Solutions have been issued by Messrs. Burroughs, Wellcome & Co., of Snow Hill Buildings, London, E.C. These preparations are portable and require no weighing, the simple solution of two in a pint of sterilised water at a temperature of 100° F. forming an injection of the proper strength. Their suitability and great convenience for use in a method of treatment which is essen-

tially an emergency one will therefore be fully appreciated:— Sodium chloride, gr. 30 (1·944 gm.). Sodium chloride and sodium sulphate: *R*—sodii chloridi, gr. 15 (0·972 gm.); sodii sulphatis, gr. 15 (0·972 gm.). Sodium chloride compound: *R*—sodii chloridi, gr. 25 (1·62 gm.); sodii sulphatis, gr. 1½ (0·081 gm.); sodii carbonatis, gr. 1½ (0·081 gm.); sodii phosphatis, gr. 1 (0·065 gm.); potassii chloridi, gr. 1½ (0·097 gm.). These “soloids” are supplied, in tubes containing 6, at 5d. per tube.

New “Soloids.”

MESSRS. BURROUGHS, WELLCOME & Co. have introduced the following—“Soloid” Lead Subacetate, gr. 10 (0·648 gm.). By the introduction of “Soloid” lead subacetate the practitioner is enabled to carry the material for the instant preparation of Goulard water in a most convenient form. One dissolved in five ounces of water yields a solution containing approximately the same quantity of lead subacetate as the official liq. plumbi subacetatis dilutus. It offers many conveniences for the prescription of an astringent and soothing application, replacing the bulky and unsightly bottle of lotion, and enabling the patient to adhere to the physician’s directions when travelling or when pursuing his usual daily vocation, without being encumbered with a fluid preparation.

“Soloid” Lead and Opium Lotion: *R*—Plumbi acetatis, gr. 2 (0·13 gm.); tinct. opii, min. 20 (1·184 c.c.) This preparation offers the same advantages and conveniences for the preparation and regular use of a lead and opium lotion as “soloid” lead subacetate does with regard to Goulard water. Owing to the quality of its constituents and the accuracy of the dosage it is possible to prepare a fresh and active lotion of reliable strength with great ease.

Guaiacol Camphorate.

THIS new drug—a result of original work in the Wellcome Chemical Research Laboratories, and now prepared by Messrs. Burroughs, Wellcome & Co.—is a combination of guaiacol with camphoric acid.

It is well known that these bodies have been used separately for some time in the treatment of consumption with most favourable results. Guaiacol has been found to exercise a general action in controlling the disease, and camphoric acid diminishes the characteristic night sweats. Inferentially,

therefore, it was considered likely that a combination of these two therapeutic agents would be extremely valuable. Clinical trials by a responsible authority appear to justify this view. He reports as a result of his observation of a series of test cases that he is well satisfied with the results obtained, especially as this combination appears to be much better borne than other preparations of guaiacol.

Guaiacol camphorate is supplied in powder, in bottles containing $\frac{1}{2}$ oz., or as "Tabloid" Guaiacol Camphorate, gr. 5, in bottles containing 25 and 100.

Aspirin.

MESSRS. FRIEDRICH BAYER & Co., of Elberfeld, Prussia, have introduced a substitute for salicylic acid under this name. Aspirin is the acetic ester of salicylic acid, and forms a white crystalline powder, with a melting point of 135° . It dissolves sparingly in water, but readily in alcohol. The chief advantage which aspirin has over salicylic acid and its salts is, that it does not irritate the mucous membrane of the stomach; furthermore, that it passes through the stomach entirely unchanged, decomposing only in the alkaline gastric juice. Owing to these properties, digestive troubles are completely avoided and the appetite is not diminished. A further recommendation is the pleasant, slightly acid taste which aspirin has, as against the disagreeably sweet taste of the salicylates. Aspirin, owing to its very slow decomposition, scarcely gives rise to singing in the ears, which is so frequently noticed during the administration of the salicylates. From the clinical observations already recorded by Dr. Kurt Witthauer, Chief Physician of the House of Diaconesses, in Halle o/S ("Heilkunde," April, 1899), and by Dr. Wohlgemuth, Physician of the First Clinic of Privy Counsellor von Leyden in the Berlin University ("Therapeutische Monatshefte," No. 5, 1899), it would appear that aspirin is a perfect substitute for salicylic acid and its salts. The following mixture is recommended as a pleasant form for administering the product:—Aspirin, 15 grains; sugar, 50 to 60 grains; water, half an ounce.

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PART I.
ORIGINAL COMMUNICATIONS.

ART. VIII.—*Clinical Reports of the Rotunda Hospitals, for One Year, November 1st, 1897, to October 31st, 1898.** By R. D. PUREFOY, F.R.C.S.I. (Master); and R. P. R. LYLE and H. C. LLOYD, Assistants.

DURING the twelve months comprised in this Report 1,840 women were admitted to the maternity department, 1,513 were confined, and 327 were discharged not in labour.

TABLE NO. I.—*Admissions to Maternity Department, 1897-98.*

—	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
Total number of Deliveries (child viable) -	105	129	128	113	122	131	111	121	125	110	124	115	1,434
Ditto (child non-viable) -	4	3	1	5	3	0	4	3	2	5	3	5	38
Abortions -	1	4	5	6	2	2	6	4	1	2	4	4	41
Total cases treated	...	...	...	...	...	...	...	...	...	...	...	...	1,513
Patients admitted, but discharged not in Labour -	30	21	38	21	24	29	31	28	22	31	30	22	327
Total admissions	140	157	172	145	151	162	152	156	150	148	161	146	1,840

* Read before the Section of Obstetrics, Royal Academy of Medicine in Ireland, Friday, March 14, 1899.

TABLE NO. II.—*Dispensary for Out-door Patients.*

Number of First Attendances	Number of Repeated Attendances
4,223	4,990

TABLE NO. III.—*Showing Number and Nature of Cases Treated in the Extern Maternity, 1897-98.*

Total number of cases	-	2,129	Mortality, maternal	-	7
Abortions	-	275	Multiple pregnancies—		
Chorea	-	1	Twins—		
Deformed pelvis	-	2	Females	-	6
Hæmorrhage—			Males	-	13
Accidental	-	12	Male and Female	15	
Placenta prævia	-	8			34
Post-partum	-	29	Triplets—		
		49	All males	-	2
Hæmatoma vulvæ	-	2	Operations—		
Hydramnios	-	3	Curetting for		
Infantile conditions—			abortion	-	78
Anencephalus	-	6	Forceps	-	31
Hydrocephalus			Paracentesis		
and spina bi-			capitis	-	1
fida	-	1	Placenta removed manu-		
		7	ally	-	27
Moles—			Version	-	9
Vesicular	-	1			146
Carneous	-	1	Presentations—		
		2	Breech	-	65
Mortality, infantile (born			Brow	-	1
dead)—			Face	-	5
Macerated	-	14	Footling	-	13
Non-viable	-	24	Occipito-posterior	-	13
Premature	-	18	Shoulder	-	1
Putrid	-	2	Transverse	-	6
Recent	-	45			104
		103	Prolapse of funis	-	7
			Rupture of uterus	-	1

INTERESTING CASES IN EXTERN MATERNITY.

CASE I.—M. Q., aged thirty-five, 1-para; delivered November 2, 1897. *Concealed accidental hæmorrhage.* When seen patient was collapsed, pulse 160, scarcely perceptible, and showed all the symptoms of severe internal hæmorrhage; there was no external hæmorrhage. The uterus was greatly distended, and painful on palpation; the vertex was presenting, but the os did not admit the

finger. Porro's operation was performed, the patient being too collapsed to move into the hospital; a large quantity of blood was found free in the uterus, with the placenta entirely detached. The patient rallied somewhat after the operation. The following morning she was transfused with saline solution, but died the next day.

CASE II.—M. K., aged thirty, 3-para; delivered November 1, 1897. *Generally contracted pelvis.* Labour was induced in the hospital by Krauze's method. Labour pains supervened, and expelled the bongies, after which the pains ceased. She left the hospital against advice, and was delivered the following day in the Extern Maternity. The child was alive.

CASE III.—Mrs. F., aged twenty-nine, 9th pregnancy. *Triplets.* Six months pregnant. The first two were born as breech presentations, the third being a vertex; all three were males. There were two placentæ. The infants lived for only a short time after birth. There was a family history of multiple pregnancies, though this was the first occasion on which the patient had had more than one at a birth.

CASE IV.—M. B., aged thirty-nine, 10th pregnancy. There was nothing of interest in this case beyond the fact that the placenta was retained for $2\frac{1}{2}$ hours, and then readily expressed. The patient had, however, given birth to twins on three occasions, and once had three at a birth; one of the triplets still lives and five of the twin children.

CASE V.—M. A. M'G., aged twenty, 2nd pregnancy. *Chorea.* Was seen by various students at frequent intervals during the previous two months. She, on each occasion, refused to come into the hospital. She had very pronounced chorea; so violent were the movements that she could scarcely get food to her mouth. She delivered herself, at term, of a living child, and soon after delivery the movements began to abate.

CASE VI.—M. W., aged thirty-two, 5th pregnancy. *Triplets.* First child born as breech presentation, its placenta following it in 15 minutes; the second, also a breech, and the third, a vertex. These two had a common placenta; they were all males, the first being stillborn. The mother was seen five months later, when one child was still alive and well.

CASE VII.—M. W., aged thirty. *Paracentesis capitis.* Breech presentation and hydrocephalus. In this case the child, a female,

was delivered as far as the neck, when it was found that the uterus contained an enormous head. This was punctured behind the ear, and a very large quantity of fluid escaped, delivery then being easy. The child had also a spina bifida.

EXTERN MATERNITY—ACCOUNT OF DEATHS.

CASE I.—M. Q., aged thirty-five, 13-para. *Concealed accidental hæmorrhage.* Porro's operation. Reported under "Interesting Cases," *q.v.*

CASE II.—M. J., aged twenty-three, 4-para. *Post-partum hæmorrhage.* Patient was attended by a "handy woman," who sent to the hospital for assistance two hours subsequent to delivery of the child. During this time the patient had been bleeding freely, and when seen was nearly exsanguine and pulseless. The placenta was adherent and had to be removed manually, but the patient died a few minutes later.

CASE III.—M. M'E., aged forty-six, 6-para. *Probable rupture of the uterus.*—Sudden death undelivered; no autopsy obtainable. Patient had all the symptoms of rupture of the uterus, with severe internal hæmorrhage. She was at full time. There was a history of short but very violent labour, with pains suddenly ceasing and slight external hæmorrhage, followed by collapse.

CASE IV.—M. T., aged thirty-three, 8-para. *Placenta prævia lateralis.* This patient died of severe hæmorrhage caused by the above condition on the arrival of the Extern Assistant.

CASE V.—M. D., aged thirty-five; 11th pregnancy. *Septic pneumonia.* Shortly after this patient was seen she discharged an apoplectic ovum from the uterus. This was the size of a hen's egg; had exceedingly thick walls. At this time her temperature was 105° F., and pulse 120. The temperature continued high notwithstanding daily douching and plugging with iodoform gauze. On the sixth day she had pneumonic signs, with marked jaundice, and on the eleventh she died. The spleen and liver were both enlarged on palpation.

CASE VI.—L. D., *Hemiplegia.* Had been treated for some time before delivery by dispensary doctor for right hemiplegia and loss of speech. She had incontinence of fæces. Delivery was normal, and the child was born alive. There was no rise of temperature or pulse during puerperium, but on sixth day she had several epileptiform seizures, and died shortly afterwards.

CASE VII.—B. D., 10th pregnancy. *Phthisis*. This patient had been confined to her bed for two months, and was in advanced phthisis, both lungs being much affected; she had been under treatment by the dispensary doctor. She died on the third day after confinement; the child was alive.

TABLE NO. IV.—*Showing Number and Nature of Cases Treated in the Intern Maternity, 1897–98.*

Total number of cases	-	1,513	Mortality, maternal	-	6
Primiparæ	-	537	Multiple pregnancies—		
Abortions	-	41	Twins—		
Deformed pelvis	-	5	Females	-	9
Eclampsia	-	2	Males	-	7
Hæmorrhage—			Male and female	13	
Accidental	-	6			29
Placenta prævia	-	5			
Post-partum	-	19	Myomata	-	2
		30	Operations—		
Hæmatoma vulvæ	-	3	Artificial abortion	6	
Hydramnios	-	11	Cæsarean section	2	
Hyperemesis	-	1	Forceps	-	57
Infantile conditions—			Induction of pre-		
Anencephalus	-	5	mature labour	3	
Hydrocephalus	-	3	Paracentesis		
Hydrencephalocoele	-	1	capitis	-	2
Ophthalmia	-	5	Craniotomy	-	3
Procidentia uteri	-	1	Placentæ, manual		
Spina bifida and			removal of	-	18
talipes	-	3	Version	-	11
		18			102
Insanity—			Phlebitis	-	2
Mania	-	8	Presentations—		
Melancholia	-	1	Breech	-	62
		9	Brow	-	3
Miscarriage	-	38	Face	-	6
Morbidity	-	158	Hand and head	-	2
Mortality, infantile (born			Occipito-posterior	28	
dead)—			Transverse and		
Macerated	-	29	oblique	-	7
Non-viable	-	26			108
Premature	-	13			
Putrid	-	2	Prolapse of funis	-	17
Recent	-	42			
		112			
Do., died in hospital	-	35			

ABORTIONS.

There were 41 cases of abortion admitted during the year. Some of these required no special treatment; only those in which the hæmorrhage was severe, or in which any part of the ovum was still retained, were interfered with. In all

these cases the treatment adopted was the emptying of the uterus—if possible by expression of the contents. This failing, and the os being sufficiently dilated, the ovum was removed by the finger, or if the latter condition was not fulfilled, by Rheinstädter's curette.

The percentage of abortion in the Intern Maternity is extremely low compared to that in the Extern, owing to the fact that patients suffering from hæmorrhage in the early months of pregnancy usually remain in their own homes, and send to the hospital for assistance.

One patient was admitted with a temperature of 101.6° F. A decomposing ovum was detached and expressed; shortly afterwards she had a rigor lasting ten minutes, and three hours subsequently the temperature was 102.4° F. Next morning it was 98.6° F., and remained normal throughout the puerperium. Another had a myoma the size of a fist on the left side of the fundus, and this probably was the cause of the abortion.

In a third case, after the remains of a recent abortion had been removed with a Rheinstädter's curette, it was found that the uterus was still abnormally large, while the curette gave the sensation that the uterus was not empty. A sharp curette was used, and a considerable quantity of organised blood-clot and old decidual tissue were removed from the posterior wall. There was another case similar to this.

MISCARRIAGE.

There were 38 cases of termination of pregnancy between the third and sixth months, one of which was twins; and in six the gestation was terminated artificially. Two-thirds of the total number were pelvic presentations.

In six cases the child was born alive, but died a few minutes afterwards; in eight the child was macerated; and the remainder—a few of which were expelled with the membranes intact—were stillborn. In one case (M. B.) there was placenta prævia, in another (W. P.) accidental hæmorrhage; they are recorded respectively under these headings. One case of hydramnios will be described later.

ECLAMPSIA.

There were two cases of eclampsia treated during the year.

CASE I.—**M. J. S.**, aged twenty-four, 1-para; seven months pregnant. Had general anasarca, and the urine, which was scanty, turned almost solid on boiling. Prior to being seen she had had seven eclamptic fits, she was then given half a grain of sulphate of morphia hypodermically, and was removed to hospital. On her way to hospital she had another fit. On her arrival she was given two drops of croton oil. In the next six hours, during which she had seven fits without regaining consciousness, another half grain of morphia was administered. During the next three hours she had two fits, and got a quarter of a grain of morphia, and two simple enemata, both of which were retained. One hour after the last hypodermic of morphia she had another fit; the chest was dry-cupped behind and the steam-pack employed. This caused her to perspire profusely. Some hours later, labour supervened, and she was delivered with the forceps of a dead child as soon as she came into the second stage.

Next morning, after being unconscious for thirty hours, she became semi-conscious, and passed $\frac{3}{4}$ vi. of urine. She was given calomel and mist. sennæ co. Later on her bowels moved freely, and she passed $\frac{3}{4}$ xiv. of albuminous urine.

Two days later she developed puerperal mania, was very restless and excitable, suffered from hallucinations, and refused to take any food. It was found necessary to feed her with a soft œsophageal tube. The mania lasted only three days; it gradually disappeared; she became convalescent, and was discharged well on the 13th day.

Her temperature and pulse, both of which were normal on admission, rapidly rose during the fits, and are recorded as 104° F. and 156 respectively one hour after the last eclamptic fit. They both fell to normal on the morning of the third day, but rapidly rose again with the mania, and reached 103° F. and 140 on the morning of the fifth day. Next day they dropped to normal, and remained so throughout the puerperium. She has since been seen several times in perfect health.

CASE II.—**M. M.**, aged twenty-eight, 1-para; full time pregnancy. Patient got an eclamptic seizure lasting three minutes while in the second stage. The urine was highly albuminous. Forceps were applied, and the child, weighing 8 lbs., delivered alive. Six hours later she had another fit, followed in half an hour by a third.

Two drops of croton oil were then given. An hour later, as she had another fit, half a grain of sulphate of morphia was given hypodermically. As she had only one other fit shortly after the hypodermic, the morphia was not continued. She made a good recovery, and was discharged well on the eighth day.

TABLE NO. V.—*Accidental Hæmorrhage.*

Name	Variety	Treatment	Result to Child	Remarks
C. W.	Concealed	No interference	D.	No symptoms; retro-placental clots
B. R.	"	"	D.	" "
B. N.	Apparent	Version	D.	Detained under hydrocephalus
M. H.	Concealed	Plug and binder	D.	Delivered herself
B. C.	"	No interference	D.	Retro-placental clots
W. P.	"	Plug and binder	D.	Delivered herself

Two of these were mild cases without symptoms, the condition only being found on delivery, by the placenta, with a quantity of coagulated blood, coming away immediately after birth of the dead foetus. One had considerable distension of the uterus, and a slight escape of blood *ante-partum*.

The two others are as follow :—

CASE I.—M. H., aged twenty-two, 3-para; admitted August 9th from Extern Maternity; 7 months pregnant, with history of sudden and very severe abdominal pain, with vomiting and fainting. There was very slight external hæmorrhage. The uterus was nearly up to the ensiform cartilage, was very tense, and palpation gave patient great pain. The foetus could not be felt. On vaginal examination the membranes were unruptured, os the size of a florin, and vertex presenting. Patient was in a condition of collapse, and the pulse scarcely preceptible at the wrist, and 135 per minute. The vagina was carefully douched and tightly plugged with boiled cotton wool plugs, and an abdominal binder applied. Hot drinks and whiskey were administered by the mouth, and one hour later good pains came on, partly forcing the plugs from the vagina. On removing them the patient expelled a dead foetus, which was immediately followed by the placenta, and about $1\frac{1}{2}$ pints of dark-

coloured blood, and a quantity of clots. The uterus contracted well, and convalescence was uneventful.

CASE II.—W. P., aged thirty-four, 13-para; admitted August 19th; 6 months pregnant, with a history of severe abdominal pain, vomiting and fainting, coming on while she was lying in bed. There was very slight external hæmorrhage on one occasion only. The condition was almost similar to that of M. H., with pulse of 132. She became more collapsed after admission—had sighing respirations, tossing her arms about, and became cold all over. Similar treatment was pursued, and, as she improved considerably, morphia $\frac{1}{4}$ gr. was given hypodermically 4 hours later. She then slept for 5½ hours, waking occasionally to take nourishment. At the end of this time good pains came on, and she expelled the plugs, which were followed by the foetus and placenta, with two enormous blood-clots lying behind it. Her temperature the same evening was 103° F. Next day it was normal, and remained so throughout.

TABLE NO. VI.—*Placenta Prævia.*

Name	Variety	Result to Child	Presentation	Period of Pregnancy	Treatment and Remarks
M. B.	Marginalis	D.	Footling	6 months -	Ruptured the membranes and traction on the foot
E. R.	Lateralis	A.	Vertex -	Full time -	Patient in labour; ruptured the membranes
K. L.	Marginalis	A.	Occipito-posterior	Full time -	" "
M. K.	Lateralis	A.	Face -	Full time -	Internal version and foot brought down
L. M.	Lateralis	A.	Vertex -	Full time -	Bi-polar version and foot brought down

In every case convalescence was normal.

POST-PARTUM HÆMORRHAGE.

There were nineteen cases of post-partum hæmorrhage, ten of which were mild. Two of these were caused by retained portions of membranes, the others by atony of the uterus. They were treated by removing the cause, hot douching, ergot, and massage. One only had a temperature; it did not exceed 101.2° F., was normal on the fourth day, and remained so. In three forceps had been applied.

One was a case of twins, another followed placenta prævia. Four of the severe cases were due to adherent portions of placenta, which were removed manually: the remainder were due to atony of the uterus. In these the treatment was hot uterine douching, massage, and ergot. There were two cases of secondary hæmorrhage—one occurring on the second day after delivery, the other on the fifth day.

HÆMATOMATA.

CASE I.—M. M'C., aged twenty-six, 2nd pregnancy; admitted to gynæcological department with history of discharge of dark-coloured blood from vagina a week before. She had a mass of knotted varicose veins protruding from the vulva occupying the posterior vaginal wall. It had a base about 3 inches long; the surface was about to break down. From the rectum a depression was felt at the back of the mass. It was dissected off, and a quantity of blood-clot displaced from behind. The raw surface was stitched with continuous catgut suture. Fourteen days later labour came on, and in the birth of the child the wound opened. It was stitched up after confinement and healed up excellently. This was a case of polypoid hæmatoma, as described by Ahlfeld.

CASE II.—R. B., aged twenty-three, 1st pregnancy; was delivered in the Extern Maternity. Labour was normal. An hour afterwards she began to feel some pain in the left labium. On examination this was found to be distended by blood-clot to the size of a small coconut, black and glossy in surface at its lower portion. The swelling was opened in hospital under an anæsthetic, and a blood-clot as large as a fist was removed and the surface stitched with interrupted silkworm-gut sutures. The result was excellent, and the patient went out well on the 20th day.

CASE III.—E. W., aged twenty-one, 1st pregnancy; after twelve hours labour some hæmorrhage was observed, and on examination it was found that there was a tear in the posterior vaginal wall reaching to, but not involving, the perineum, the foetal head being about $1\frac{1}{2}$ inches from the outlet. There suddenly appeared a swelling extending rapidly from near the right anterior margin of the anus into the labium of the same side. Forceps were applied and delivery effected, after which the lacerations and cavity from which the blood was evacuated were stitched up with silkworm-gut sutures. Puerperium was uneventful, and result good.

HYDRAMNIOS.

In the eleven cases of hydramnios there were one brow and two face presentations. In seven of the cases the membranes had to be ruptured artificially. Of the children four were anencephalic, one had spina bifida with talipes varus, and another, although it lived three hours, was macerated. Two of the mothers were admitted in a very debilitated condition, and improved rapidly during their stay in hospital. One had a pulse of 130, and temperature 102° F. on the evening of admission, with venous thrombosis of the right leg; the foetus, besides being anencephalic, was macerated. Her temperature ranged between 100° F. and 102·6° F. for the first six days in hospital, when it fell to normal, and continued so until the 21st day, when she was discharged well.

The other, six months pregnant, had a pulse of 134 on admission, and was greatly emaciated. Her temperature, however, was normal. The membranes were ruptured, and fifteen measured pints of fluid escaped. The foetus, besides being anencephalic, had cleft palate, hare-lip, spina bifida, and apparently no cervical vertebræ—it weighed 2½lbs. The puerperium was uneventful, and she was discharged well on the 8th day.

HYPEREMESIS.

CASE.—A. M., aged twenty-eight, 2nd pregnancy; admitted March 26th. This was the only case of this condition occurring in the practice of the hospital during the year, and we regret to have to record it as a death. She was about eight months pregnant, and was admitted in an extremely emaciated condition and moribund, with a history of continued vomiting for the previous two months. She also stated that there had been no movement of the bowels for four weeks. Her temperature was 97·6° F, and pulse 104, hardly perceptible. On examination the foetal heart was heard on the left side, and the head was engaged in the pelvis. Soon after, on the onset of labour pains, the foetal heart ceased, and as soon as she came into the second stage forceps were applied and delivery effected, the child being dead. She lingered on until the next day, taking small quantities of fluid nourishment, and then died. The lower bowel contained no fæces, and there

was no result from the enema which she got on admission. She was transfused with five pints of 1 per cent. saline solution intravenously, and though this gave rise to some improvement in condition it was only very transient. The autopsy showed the stomach much dilated, the intestines empty, and the kidneys large, soft, and fatty.

TWINS.

There were 29 twin births. In one case the second child was transverse, the hand, foot, and cord prolapsed; delivery was effected by traction on the foot, and pushing up the head. In another case a hand of the second child was prolapsed past its head; it was left to nature. A third case is reported under "Forceps." The presentations were—

Both vertex	-	-	-	14
Vertex and breech	-	-	-	7
Breech and vertex	-	-	-	5
Both breeches	-	-	-	1
Vertex and transverse	-	-	-	1
Vertex, vertex and hand	-	-	-	1

ARTIFICIAL ABORTION.

There were six cases of artificial abortion during the year, the patients being pregnant for periods varying from three and a half to six months, and suffering from repeated hæmorrhages.

In every case laminaria tents were used, and the vagina plugged with boiled cotton wool, the wool and tents being removed when the patient came into labour, which usually occurred within twelve hours.

In two cases the foetus was extracted piecemeal by Schultze's spoon forceps on account of insufficient dilatation of the cervix. In four cases the placenta was adherent, and had to be removed with the fingers. Three of these cases were plugged with iodoform gauze on account of hæmorrhage subsequent to removal of the placenta.

In every case convalescence was normal.

(To be continued.)

ART. IX.—*Trade Callosities.* By H. S. PURDON, M.D.; Consulting Physician, Belfast Hospital for Diseases of the Skin, &c.

PERSONS employed in certain trades bear on various parts of their bodies the marks of their calling. You can tell a sweep or a flour-miller by looking at him when in working clothes; but the cases to which I refer are due, in the first instance, to an excess in the nutrition of the skin, causing excessive growth, followed by a hard, thickened condition of the skin, due to pressure and constant friction—in other words, a callus or callosity. It is possible, in many instances, to tell the occupation of a person from the nature and situation of his callosities. Moreover, in a medico-legal point of view the identification of a person might thus be satisfactorily settled. These trade “marks” are due to want of moisture in the cuticle, caused by the pressure of the tools or other mechanical appliances used by the worker at his occupation.

A French physician, Dr. Vernois (*De la Main des Ouvriers et des Artisans, au point de vue de l'Hygiène et de la Médecine légale*) has written on callosities produced in different arts and occupations.

The trades I have noticed callosities to be caused by are, first, those occurring on the *Right Hand*, as in—

Trade	Situation
Laundress . . .	The entire internal surface of hand.
Burnishers . . .	Fingers and internal surface of hand.
Flax Hecklers . . .	Index finger of right hand.
Shoemakers . . .	Fingers of right hand and palm of hand.
Wood Carvers . . .	Radial border of index finger.
Cabinet Makers . . .	Internal surface of fingers of hand.
Compositors . . .	Index finger and thumb.
Carpenters and Joiners . . .	Internal surface of hand and fingers.

Trade	Situation
	<i>Left hand.</i>
Locksmiths . . .	Thumb and index finger and thenar eminence.
Sailors . . .	Palms of both hands.
	<i>Forearms.</i>
Washerwomen who wash in tubs	Cubital surface of both forearms.
	<i>Thighs.</i>
Shoemakers . . .	Anterior surface of left thigh.
	<i>Knees.</i>
Slaters . . .	Both knees.
	<i>Feet.</i>
Tailors . . .	Over fifth metacarpal bone externally.
	<i>Sternum.</i>
Wheelwrights . . .	Over epigastric region.

The skin is thickened and in a callus condition in the situations named.

Many other occupations have their characteristic callosities, as the tip of the fingers of the left hand in "cello" players, three fingers of a drummer, the thighs of a harpist, gilders of metal, lacemakers, horsemen (ischiatric region), have special callosities.

I need scarcely remark that when the cause is removed, as by the person ceasing or taking to another occupation, the skin takes on in time a natural condition, and the hypertrophied callus state disappears.

ART. X.—*Imperforate Hymen* (?). By R. J. KINKEAD, M.D.; Professor of Obstetrics, Queen's College, Galway; Physician and Gynæcologist to the Galway Hospital.

CASE.—M. N., alleged to be aged thirteen and a half years, was admitted to the Galway Hospital on 13th June, 1899.

She complained that for some time she had suffered from pains in the abdomen—so severe that to obtain relief during the paroxysms she had applied "a hot 'griddle' to her stomach," the skin of which was singed and discoloured; she had never menstruated, suffered from constipation, had not vomited, and had never had any difficulty in passing water.

In face and stature she appears to be older than the age stated, her mother, however, is very positive that she is only thirteen and a half; the breasts are fairly developed, the growth of hair on genitals is very scanty, especially on pubes, the vulva appears to be that of a girl prior to puberty, the fissure, however, is larger than usual, the nymphæ large, project beyond the labia majora, a tumour is seen at the vaginal orifice, shining, greenish-blue in colour, long axis from above downwards, a well-marked raphe, with horizontal striæ passing from it to margins, in size that of half a hen's egg, cut in long axis, adhering closely to its circumference, especially at upper margin, its tissue resembling that of a normal hymen.

On abdominal palpation a tumour the size of a turkey egg is felt on a level with and to the left of the umbilicus, oval and movable, from tumour to pubes was a semi-elastic mass, dull on percussion.

On the 14th ether was administered, and a bimanual examination made through the rectum.

The tumour at level of umbilicus proved to be the enlarged uterus; the mass moving down from it to the distended vagina, which occupied the middle of the pelvis and could be traced up into the abdomen, was cylindrical, not as figured in books, ballooned out, so as to fill the pelvis, room for the retained menstrual fluid being obtained by longitudinal extension, not by lateral distension.

The vulva having been thoroughly washed and disinfected, I excised a piece of the membrane, somewhat larger than a shilling; a large quantity of thick, viscid, reddish-brown fluid flowed out with considerable force; on its ceasing to flow the vagina was irrigated with Condyl's fluid and water, and an aseptic gauze drain introduced.

On 15th about a wineglassful of fluid escaped on removal of plug, vagina irrigated, and fresh drain introduced; on 16th drain removed, no discharge; on 17th there was difficulty in introducing glass tube of irrigator; on 18th she was again put under ether. The opening had contracted so much that there was some difficulty in passing in tip of index finger, the membrane felt exactly like an indiarubber ring; I incised the membrane in four places, it was so tough and resisting that I was obliged to transfix at vaginal margin and cut out to its free edge; a gauze plug was packed in and left *in situ* for twenty-four hours.

Throughout there were no feverish symptoms—the pulse 72 and the temperature normal.

Having in mind a case, which I brought before the Royal Academy of Medicine in 1887, in a paper on "The Signs of Virginity," in which I found, in a woman in labour, who some years previously had been operated on for imperforate hymen, an opening in the hymen not as big as a crow-quill, and in which the hymen was an obstacle to delivery, I endeavoured to avoid a similar result in this case by excising a large piece of the membrane, yet it would have occurred if I had not afterwards cut freely the remnants of the elastic membrane, the rapid contraction of which surprised me.

Unfortunately the excised piece was lost, so that sections could not be made and its structure studied. Its appearance prior to operation, and the feel and appearance of the parts after operation, point to the obstruction not being merely a dense or thick hymen without an opening, but rather that the occlusion was caused by a membranous septum immediately behind the hymen, and to which the latter was adherent.

ART. XI.—*The Water Supply of Dublin.* By JOHN WILLIAM MOORE, M.D., M.Ch., B.A., Univ. Dubl.; P.R.C.P.I.; Ex-Scholar and Dipl. State Med., Trin. Coll., Dubl.; Physician to the Meath Hospital.

DUBLIN and its suburbs are fortunate in possessing an abundant supply of pure soft water, and the Dublin Corporation Water Works enjoy a reputation far and wide for completeness and efficiency.

The following account of the Water Works is abridged from the description written in 1875 by the Engineer, Mr. Parke Neville, C.E., M.I.C.E., F.R.I.A., M.R.I.A., and published by Mr. John Falconer, 53 Upper Sackville-street, Dublin. For the more recent information I am indebted to Mr. Spencer Harty, C.E., the City Surveyor and Waterworks Engineer, and Mr. Charles Power, Secretary to the Waterworks Committee of the Corporation. Both gentlemen spared neither trouble nor time in answering certain queries which I addressed to them with the view of

making this description as complete and accurate as possible.

In August, 1860, Mr. (afterwards Sir John) Hawkshaw visited Dublin as a Royal Commissioner to examine into all the schemes at the time proposed for improving the water supply of the Irish metropolis. In his Report, dated October 20, 1860, Sir John Hawkshaw expressed the opinion that the then existing supply of water to the City of Dublin was bad, that there was urgent need of an improved supply, and that the best source from which such could be obtained was the River Vartry in the County Wicklow. The Vartry scheme had been in the first instance suggested by Mr. Richard Hassard, C.E.

After a severe Parliamentary contest the Dublin Corporation Water Bill, based on the Royal Commissioner's recommendations, obtained the Royal assent on July 21, 1861. The first stone of the Water Works was laid at the Prince of Wales' Reservoirs, Stillorgan, by the Earl of Carlisle, Lord Lieutenant of Ireland, on November 10, 1862. The water of the River Vartry was turned from its ancient course through a tunnel under the main embankment of the great storage reservoir near Roundwood, Co. Wicklow, on June 30, 1863, when the Lord Lieutenant (Lord Carlisle) conferred the honour of knighthood on Sir John Gray, M.D., Chairman of the Dublin Corporation Waterworks Committee. It was not, however, until 1868 that the Vartry water was supplied to Dublin and its suburbs on the completion of the works.

The River Vartry rises on Calary moor, Co. Wicklow, at the base of Djouce Mountain and of Great Sugar Loaf Mountain, whence it flows in a southerly direction through a thinly peopled district to the Devil's Glen. Passing as a mountain torrent through this beautifully wooded valley, it flows by the village of Ashford, finally reaching the Broad Lough, as the lagoon inside the Murrow of Wicklow is called, and discharging into the sea at the town of Wicklow. The length of the river from its rise to the sea is $17\frac{1}{2}$ miles, and its catchment area is 34,890 acres. The geological formation of this area is the lower Silurian and Cambrian slate, except on the hill-tops towards the

west, where the granite crops out in spots. The Vartry water is peculiarly soft and pure, quite colourless during the greater part of the year. In a word it closely resembles Loch Katrine water, with which Glasgow is supplied. The catchment area draining into the river above the waterworks is 14,080 acres.

Fortunately for the success of the scheme the rainfall in the Vartry district was under-estimated. No rain-gauges existed prior to 1860. It was calculated that, allowing for loss by evaporation and absorption, 14·3 inches would remain for the supply of Dublin, and that this over the catchment area of 14,080 acres would equal 12,000,000 gallons a day, or 25 gallons a head for a population of 400,000, with 2,000,000 gallons for manufacturing purposes. Since 1860 several rain-gauges have been in action in the district.

The following Tables have been compiled from the Official Returns:—

TABLE I.—*Showing the Yearly Rainfall at Vartry Lodge, Roundwood, Co. Wicklow, for each of the Thirty-eight Years, 1861–1898.*

	Inches		Inches		Inches		Inches
1861	60·86	1871	51·65	1881	55·52	1891	49·04
1862	60·65	1872	69·34	1882	57·45	1892	44·63
1863	45·09	1873	40·08	1883	61·52	1893	33·74
1864	47·76	1874	42·50	1884	39·16	1894	67·13
1865	48·69	1875	61·75	1885	47·82	1895	54·07
1866	53·48	1876	61·27	1886	49·91	1896	51·14
1867	46·05	1877	64·80	1887	31·91	1897	63·58
1868	56·15	1878	43·15	1888	60·13	1898	52·51
1869	49·00	1879	53·07	1889	47·34		
1870	43·68	1880	53·78	1890	47·02		
Decennial Means, 1861–1870	Inches 51·14	Decennial Means, 1871–1880	Inches 54·14	Decennial Means, 1881–1890	Inches 49·78	Means, 1891–1898 (Eight years)	Inches 51·98

TABLE II.—Showing the Monthly and Yearly Rainfall at Varray Lodge, Roundwood, Co Wicklow, for the following fifteen years.

	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	Means	
	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	
January -	4.21	5.07	3.01	3.25	4.85	4.91	6.98	2.03	2.13	7.72	7.45	6.88	1.19	6.95	3.88	4.70	January
February -	11.20	6.51	6.21	1.85	1.37	3.65	2.05	0.23	4.61	5.13	4.15	1.80	2.71	3.00	2.57	3.80	February
March -	5.18	3.72	3.41	2.78	8.50	3.08	5.01	1.66	1.49	1.15	3.06	4.57	8.81	7.83	1.92	3.81	March
April -	3.39	5.28	2.80	1.49	2.64	3.49	2.67	3.63	1.66	0.44	7.51	3.18	0.77	6.47	4.82	3.35	April
May -	2.14	3.26	6.81	1.76	3.66	4.65	4.30	4.00	4.65	0.77	7.03	0.54	0.09	1.12	7.04	3.46	May
June -	0.59	1.07	1.43	0.15	4.52	0.29	3.00	5.49	3.98	1.92	2.61	1.80	2.81	4.77	3.30	2.52	June
July -	3.65	0.73	3.84	1.47	8.16	2.29	2.57	1.83	3.69	2.02	6.31	5.68	6.89	1.70	1.47	3.49	July
August -	0.53	4.90	1.93	4.04	3.09	5.92	3.41	4.68	4.64	3.96	5.36	6.94	1.56	8.73	4.81	4.30	August
September	1.74	4.52	3.23	2.88	0.50	2.08	3.27	2.76	3.94	1.05	1.62	1.43	11.52	4.44	2.57	3.17	September
October	0.70	6.32	5.57	2.71	8.35	11.03	1.44	7.63	5.43	1.57	10.53	2.69	6.14	5.67	8.84	5.31	October
November -	2.53	5.06	6.79	6.64	11.26	2.16	7.89	7.45	6.71	3.34	6.76	10.30	1.84	6.31	8.12	6.21	November
December -	3.30	1.38	4.83	2.88	8.21	3.79	4.42	7.66	1.68	4.67	4.69	8.26	11.81	6.59	3.17	5.16	December
TOTALS -	39.16	47.82	49.91	31.91	60.13	47.34	47.02	49.04	44.63	33.74	67.13	54.07	51.14	63.58	52.51	49.28	TOTALS

The foregoing figures clearly show within what wide limits the precipitation in the Vartry Catchment Basin varies from year to year. In 1872 the rainfall amounted to 69·34 inches. In 1887 it reached 31·91 inches only. The average rainfall for the fifteen years included in the Table—1884–1898—was 49·28 inches. For the whole series of 38 years the average annual rainfall was 51·75 inches—a figure which may be regarded as final.

The great storage reservoir stands about $7\frac{1}{2}$ miles from the source of the Vartry River and $1\frac{1}{2}$ miles S.E. of the village of Roundwood. When filled to the level of the bywash, the water in the reservoir covers 409 acres, its greatest depth being 60 feet and its mean depth 22 feet. Its surface is 692·45 feet above Ordnance datum (low water of a 12-foot tide at the Poolbeg Lighthouse, Dublin Bay). The storage capacity of the reservoir or Lough Vartry is about 2,400,000,000 gallons, equal to 200 days' supply for the City of Dublin and its suburbs at the rate of 12,000,000 gallons a day.

The water leaves the reservoir through three 24-inch valve inlets at different levels in a turreted water-tower connected with a 33-inch pipe, which passes through a tunnel some 300 feet in length under the great eastern embankment. At the far side the water is carried into a series of filtering beds, and thence into two pure water tanks. From these last the water is conveyed to a tunnel 4,332 yards in length, through which the water is carried from the valley of the Vartry under a range of hills, averaging 1,000 feet in height, dividing it from the districts towards the east. Great difficulties were met with in driving this wonderful tunnel of over 3 miles in length. The chief of these were the hardness of the rock, which was of the lower Cambrian or Silurian system, the irregularities of the stratification and the thinness of the layers, which were frequently horizontal, and the quantity of water met with in the borings. The tunnel was driven from 21 shafts, each 200 yards apart. The first shaft was commenced on January 4, 1863, and the last heading was opened out in September, 1866, the total time taken to drive the tunnel being thus 3 years and 8 months.

At the northern end of the tunnel, at Callow Hill, a cast-iron gauge weir has been erected for registering the quantity of water passed down daily for the metropolitan supply. The water is measured six times daily by a floating meter. From a tank, 86 feet in diameter and 10 feet deep, the water is conveyed from a level of 602 feet above Ordnance datum through a 33-inch main to the service reservoirs at Stillorgan. The length of this main is 30,942 yards, or 17 miles, 4 furlongs, and 142 yards, and the falling hydraulic line is 20 feet per mile. Three relieving tanks to diminish the pressure are constructed on the line of main—at Kilmurray (473 feet), Kilcrony (414 feet), and Rathmichael (341 feet), the last distant 7,431 yards from the Stillorgan reservoirs.

The three distributing reservoirs at Stillorgan (of which the two which were first constructed are called the Prince of Wales's Reservoirs) are 4 miles, 5 furlongs, and 150 yards from the City boundary at Eustace Bridge, Leeson-street. The fine new reservoir, called the Gray Reservoir in memory of Sir John Gray, is capable of holding 100,000,000 gallons. The top water level in the upper of the two original reservoirs is 274 feet, and in the lowest 271 feet above Ordnance datum, or 170 feet above the highest part of the City. The lowest reservoir contains 43,166,548 gallons, with an average depth of 22 feet of water; the middle reservoir contains 43,057,424 gallons, with an average depth of 20 feet of water. The screen chamber is a handsome octagonal building, of granite ashlar, situated at the south-eastern angle of the lower reservoir. It is 46 feet wide at the bottom, and 49 feet at the level of the floor line, each side being about 20 feet long on the floor line. The screens, through which the water is passed to the distributing mains, are of copper-wire gauze, having 30 strands to the square inch. The entire area of the screens is 1,500 superficial feet. Two 27-inch mains, controlled by two 27-inch valves, convey the water from the screen chamber to Dublin, and a 15-inch main is laid out of it for the supply of Kingstown and Dalkey.

The water is distributed to every part of the City

through lines of pipes varying from 27 to 3 inches in diameter, which extend to 110 miles in length. Fountains for the use of the poor have been erected in several parts of the City. Since the Vartry water has been introduced into the City, the necessity for using fire-engines has practically ceased, although such are kept in readiness for any emergency. Hydrants of the pattern known as Bateman and Moore's patent have been put down to the number of 1,390. They are about 100 yards apart. In case of fire a standpipe and hose is attached to these hydrants, the water thrown from them being sufficient to extinguish the largest fire.

The Dublin Corporation Water Works have been in full working order since 1868. Only in 1893 were there any apprehensions of a water famine. The total cost of the works up to the present date, 1899, has been £720,000—a figure which (with a metropolitan population of 330,000) is equal to about £2 3s. 8d. per head.

From 1868 to 1872 the consumption of water by the city and townships varied from 13 to 16 million gallons per day compared with an estimated consumption of 12 million gallons. From 1872 to 1893 the daily average consumption was about 14 million gallons.

The lowest levels in feet below the sill of the bywash reached in the following years were:—1870, 20·90; 1874, 16·00; 1876, 13·40; 1884, 26·80; 1885, 7·40; 1887, 26·90; 1891, 3·70; 1893, 39·00. In the last-named year the rainfall was only 33·74 inches, and in the late autumn serious apprehensions of a scarcity of water were entertained.

As statements impugning the purity of the Vartry water were being made from time to time, the Waterworks Committee, acting on the suggestion of Sir Charles A. Cameron, early in 1896 requested Professor Percy F. Frankland, Ph.D., B.Sc., F.R.S., Professor of Chemistry in Mason University College, Birmingham, to examine the water, particularly from a bacteriological standpoint.

Professor Frankland's Report is embodied in the following letters to Sir Charles Cameron:—

CHEMICAL DEPARTMENT,
MASON COLLEGE,
BIRMINGHAM,

22nd May, 1896.

DEAR SIR CHARLES CAMERON,

I have to report to you on the bacteriological examination which I have made at your request of a number of samples representative of the water supplied to the City of Dublin.

All the samples, seven in number, were collected by myself, personally, in specially sterilised bottles, on the afternoon of Saturday, the 9th inst.; and they were all submitted to gelatine-plate cultivation in your laboratory on the same afternoon, whilst the plate cultures thus prepared were taken by me to Birmingham, and there incubated in my laboratory.

The following results were obtained:—

SAMPLE No. 1.—This was taken from the small open carrier supplying the filter beds, and is, therefore, representative of the unfiltered water coming direct from the reservoir. This yielded 535 colonies per 1 cubic centimetre of water.

SAMPLE No. 2.—This was taken from what is known as Clear Water Basin No. 2, and is representative of the filtered water coming from one group of filters. This yielded 290 colonies per 1 cubic centimetre of water.

SAMPLE No. 3.—This was similarly taken from what is known as clear Water Basin No. 1, and is representative of the filtered water coming from another group of filtered beds. This yielded 116 colonies per 1 cubic centimetre of water.

SAMPLE No. 4.—This was taken from the main supplying filtered Canal water to a brewery in the City of Dublin, and may, as I understand, be taken as representative of this portion of the Dublin supply. This yielded 276 colonies per 1 cubic centimetre of water.

SAMPLE No. 5.—This was taken at the same place, and immediately after No. 4. It yielded 270 colonies per 1 cubic centimetre of water.

SAMPLE No. 6.—This was taken from a Stand Pipe affixed to the main in the yard of the disused Barracks. This yielded 432 colonies per 1 cubic centimetre of water.

SAMPLE No. 7.—This was taken from a tap attached to the main in your laboratory, in Castle-street. This yielded 299 colonies per 1 cubic centimetre of water.

These results show that the unfiltered Vartry water contains for surface water only a very moderate amount of bacterial life.

To appreciate, in fact, this relative freedom from bacteria, I may remind you that in the Thames water, prior to its treatment by the London Water Companies, I have generally found from 10 to 20 times as many, and sometimes 200 times as many, bacteria as in this unfiltered Vartry water although the latter contains more than I have found in the water of Scotch Lochs, such as Loch Katrine water as supplied to Glasgow, and the water of Loch Lintrathen supplying Dundee.

The examination of the two filtered samples shows that in the process of filtration about 62 per cent. of the bacteria present in the unfiltered water were removed. Possibly a greater efficiency might have been indicated by taking samples of the water as it issues from each of the filter beds, as some multiplication of the bacteria present may take place during the time that the water remains in these Clear Water Basins. I should mention, that the sand employed for filtration impressed me of being of remarkably coarse grain, and I think it very probable that superior results would be obtained if a finer sand were used. Certainly, the number of bacteria in these filtered samples is greater than should be present in efficiently filtered water, being in excess of that found in filtered water, which initially, *i.e.*, prior to filtration, is much richer in bacterial life than the Vartry.

The number of bacteria found in the samples taken at the Barracks and at the laboratory shows that some multiplication takes place between the filtration works and the City, but the considerably larger number found in the Barrack's tap is probably due to local multiplication in the main, in consequence of this tap being, as I presume, not much drawn upon at present.

As regards the nature of the bacteria in the several samples of the Vartry water, I made a special examination for the *Bacillus coli communis*, by the method of phenol-broth cultivation of each sample, but although this test was applied in duplicate throughout, not one of the Vartry samples, either unfiltered, filtered, or as distributed in the City, responded to the test.

The two samples of Canal water which I examined, contained much the same number of bacteria as were present in the filtered Vartry waters. On submitting these samples to the phenol-broth test, I obtained evidence of the presence of a micro-organism resembling in some respects the *B. coli communis*, inasmuch as it gave gas bubbles in the depth of the gelatine, but it was easily distinguishable from the *B. coli communis* on further examination, inasmuch as it neither caused milk to curdle when

cultivated in the latter, nor did it yield the indol-reaction on cultivation in peptone-broth. In conclusion, I would state that from what I saw of the Vartry watershed I am of opinion that it is a magnificent gathering ground, being, considering its extended area, but very scantily populated, whilst the great size of the Reservoir affords abundant opportunities for the purification of the water by sedimentation and oxygenation. I have, however, always recommended that exclusive reliance should not be placed in mere storage, and that surface waters should also be subjected to filtration. The works designed for this purpose just below the Reservoir appear admirably adapted for their task, being sufficiently large to permit, as I understand, of a slow rate of filtration; they are also constructed, I believe, so that the head of water can only be very slightly altered. The depth of fine sand, again, I am informed, is considerably upwards of two feet; but, as already indicated, I am of opinion that an improvement might be effected in employing a finer grained sand. In fact, unremitting efforts should be made to reduce the number of bacteria in the filtered water to a minimum by the most careful attention to the now well-known factors involved in obtaining efficiency in filtration.

I am,

Yours faithfully,

PERCY F. FRANKLAND.

*Sir Charles Cameron, Ph.D., F.R.C.S.I., &c.,
Medical Officer of Health,
Dublin.*

CHEMICAL DEPARTMENT,

MASON COLLEGE,

BIRMINGHAM,

24th June, 1896.

DEAR SIR CHARLES CAMERON,

In response to the request of the Waterworks Committee of the City of Dublin, conveyed in your letter of the 17th inst., I beg, herewith, to offer the following remarks on the subject of the Vartry Water Supply.

1. The Vartry water is derived from a gathering ground which, considering its enormous area, supports a very scanty population. As far as my inspection went, and from what I could ascertain by enquiry, there is upon the whole area only a single group of habitations to which the name of Village can be applied, and in the case of this, I understand that the sewage has been carefully

diverted, thus avoiding all possibility of contamination from that source. The remainder of the population is scattered over the gathering ground in isolated houses.

2. That some contamination may arise from these isolated dwelling-houses is unquestionably possible, but the absolute amount of such contamination must be extremely small, and its proportion to the volume of water very minute. It is almost unnecessary to remark that with such a daily supply as is required by the City of Dublin, it is hardly within the range of practical politics to obtain anywhere a gathering ground of adequate size, which would not be liable to the possibility of such fractional contamination as that to which the Vartry is exposed.

3. Under these circumstances it is necessary to consider what barriers are interposed between such possible contamination and the water consumer. The line of defence appears to me to be an idle one.

In the first place, in the absence of systematically drained dwellings, contaminating matters must, in general, take a very circuitous route to the water, and in the percolation through soil such contaminating matters, both organised and unorganised, are for the most part either arrested or destroyed.

In the second place, assuming that a part of these contaminating matters generated in the several homesteads do actually gain access to the Vartry and its feeders, they will be carried into the Reservoir, in which, in consequence of its enormous capacity, their fuller progress would necessarily be arrested for a long period of time.

Now in such a reservoir, as has been shown by myself and others, there are the most important agencies at work tending to remove bacteria in particular. Thus, during the storage of water in reservoirs, the total number of bacteria present generally becomes very generally diminished, doubtless in consequence of the process of subsidence which goes on, whilst the vitality of pathogenic forms like the typhoid bacillus is rapidly destroyed, probably through the products elaborated by the common water bacteria. Thus, I have shown that typhoid bacilli remain in a living state for a longer period of time in Loch Katrine water when the latter has been sterilised than when it is in its natural condition and populated with the ordinary water bacteria.

From the results of my experiments in this connection I am of opinion that when water is subjected to a prolonged storage of weeks, or even months, in reservoirs or lakes, the chance of any such bacilli being still alive is extremely remote.

But even should these bacilli escape this ordeal of the storage reservoir they will still be met by the third line of defence—the sand filter. The capacity of removing bacteria of all kinds possessed by this agent of purification is now so well established and generally known, that it is unnecessary for me to dwell upon it in detail, more especially as I have already in my previous report referred to this matter. But inasmuch as by the exercise of due precautions upwards of 99 per cent. of the bacteria present in the water can be removed by this means, I would again urge the desirability of rendering this third and last line of defence as perfect as possible.

4. When the existence of these three lines of defence against any possible contamination is borne in mind, it must be sufficiently obvious that, assuming any pathogenic bacteria to be at any time present on the gathering ground, the chance of their reaching the water consumer must be excessively remote.

5. Under these circumstances, I am of opinion that the Vartry water complies with the most stringent demands of modern sanitary science.

I am,

Faithfully yours,

PERCY F. FRANKLAND.

ENTEROLITHS FORMED BY DRUGS.

DR. PUIS Y SANS (*Criterio Catholico en las Ciencias Medicas*) prescribed salicylate of magnesium and benzo-naphthol to be taken in a cachet of the smallest possible size. The patient took the dose, and next day Dr. Puis received a whitish body, hard as stone, resembling an enterolith, which had been found in the motions. It consisted entirely of the drugs administered, consolidated into a stony mass. Dr. Rovira (D. Juan) saw a similar result after the administration of carbonate of magnesium and salol in the same form, and Dr. Lloret had the same result after salicylate of bismuth and benzo-naphthol had been given in a cachet. These cases show that the physical and chemical compatibility of drugs administered together should be known.—*Med. and Surg. "Review of Reviews."*

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Manual of Obstetrics. By A. F. A. KING, A.M., M.D., Professor of Obstetrics and Diseases of Women and Children in the Columbian University, Washington. Seventh edition. Revised and enlarged. 1898. London: Henry Kimpton & Co. Pp. 574.

As this manual has already passed through six editions one would be inclined to think that that fact was sufficient proof of its scientific value; however, having read it carefully through, we are inclined to think that the work falls far short of the best scientific teaching of the present day.

The treatment of abortion recommended is antiquated in the extreme. It is that which we find recommended in text-books of thirty to fifty years ago, the results of which treatment have been anything but satisfactory, because the patient, in the majority of cases, either lost her life or became a chronic invalid. Having dilated considerably on this form of treatment, the author says: "If it doesn't succeed in twenty-four hours" (which it seldom does), "to adopt the more radical measures of extraction by the finger and curette." Now, why not adopt these measures at once, when the abortion is inevitable or incomplete, and save the patient twenty-four hours' misery, the risk of becoming septic, the risk of endometritis, and all the other consequences of an incomplete abortion.

There is no worse antiseptic solution used for douching the uterus and vagina than the solution of bichloride of mercury. In the first place, when used for this purpose it is not an antiseptic, but rather a dangerous poison, as the mercury unites with the albuminous secretions of the parturient canal, forming an insoluble albuminate of mercury, which remains inert there, and is absorbed into

the system later on. In the second place, it acts as an astringent, hardening the tissues and preventing the natural secretions from taking place.

With regard to creolin, the author appears to have had no experience of its use, as he recommends it to be first mixed with "a little *hot* water," just what it will not mix with, and he recommends the strength of it to be from 1 to 2 per cent., a solution which would burn the average patient, and would ruin the operator's hands. One in 320 is the usual strength recommended.

Routine *post-partum* douching is a totally unnecessary, and often a dangerous, proceeding. "Milk fever" is a very good name to use to the patient or her relatives for the milder forms of sapræmia or mastitis, but *per se* does not exist. The establishment of the flow of milk is a purely physiological function, unattended with any fever.

One thing in which the author differs from most authorities is in placing flexion before descent in the mechanism of head presentations. In this he is probably right, as the contractions of the uterus commence in the circular muscular fibres of the lower uterine segment; they then travel to the fundus, and are rapidly followed by contractions of the longitudinal fibres. Consequently, to be still more correct, we would recommend him to put in his next edition—1. Flexion; 2. Descent and flexion, &c.

His treatment of occipito-posterior positions comes under the head of "Meddlesome Midwifery." From 90 to 95 per cent. of these positions rotate naturally to the front if left alone, and, in any case, do not terminate in anything worse than an ordinary case of forceps.

In cases of delay in the after-coming head in breech presentations, the author recommends—instead of the immediate delivery of the head—to pass up two fingers between the face and the vaginal wall, or a large catheter into the child's mouth, so as to enable it to take an inspiration. The result of this would be to fill its bronchi and lungs with vaginal mucus, meconium, and liquor amnii, which means certain death to the child. The application of forceps to the breech is a useless and

dangerous proceeding. The author does not appear to have ever heard of Neville's axis-traction forceps.

In several of the illustrations—*e.g.*, figs. 136, 137 and 156—the author will probably soil his cuffs during the operation.

Carbolised vaseline being a mechanical mixture, the vaseline protects the micro-organisms from the action of the carbolic acid, and is consequently a dangerous lubricant.

The extremely grave prognosis which the author gives in cases of placenta prævia is undoubtedly due to the treatment he recommends. *Accouchement forcé* and mechanical dilatation, or rather tearing of the cervix, are the immediate cause of the lamentable maternal mortality he mentions.

On page 413 is a collection of highly septic old Gamp measures which you are recommended to perform while you stand by and watch the patient dying. The paragraph is as follows:—

“A perfectly clean aseptic sponge, or preferably a similarly clean bit of rag or small pocket-handkerchief, saturated with spirits of turpentine or whiskey, passed into the womb, and squeezed, so that the spirit comes in contact with the uterine walls, are efficient stimuli to uterine contraction. A cloth containing pure chloroform passed into the uterus, and allowed to remain there for a time, has also been used successfully. The old, but well-tested remedies of a rolled gashed lemon and a sponge filled with vinegar being introduced, and squeezed while in the uterine cavity, have of late been objected to as being aseptically unclean. They are, however, powerful excitants of uterine contraction. The vinegar can be sterilised by boiling, and in cases of emergency it is usually obtainable in every household. A lemon can be rendered aseptic on its exterior by immersion in a bichloride solution, and that septic germs inhabit its interior structure is at least improbable, and certainly not demonstrated.”

The author's treatment of prolapse of the funis is similar to that of a medical student at an examination who has

never seen a case. He lays great stress on the reposition of the cord, an operation not often practicable, and usually a failure. The author says, "when the membranes rupture artificial reposition of the cord must be attempted," irrespective of whether the child is dead, whether the head is fixed, or whether the patient is in the second stage.

The author's treatment of eclampsia is almost as antiquated, and even more dangerous than his treatment of placenta prævia and abortion. He recommends the two most dangerous drugs which give the highest possible maternal mortality—*i.e.*, pilocarpin and chloroform, while he scarcely mentions morphin, a drug which is extensively used over the Continent and at the Rotunda Hospital, where its success has been undoubted, reducing the maternal mortality from 40 or 60 per cent. to 4 or 8 per cent.

The maternal mortality in cases of accidental hæmorrhage is given at 50 per cent. due to the treatment recommended—*i.e.*, rupture of the membranes. By this means you convert a simple case of accidental hæmorrhage into what might be called malignant accidental hæmorrhage. The extremely successful method of treating this formidable complication of labour by efficient plugging of the vagina the author does not mention in his text-book.

Atlas of Urinary Sediments; with special reference to their Clinical Significance. By DR. HERMANN RIEDER, of the University of Munich. Translated by FREDERICK CRAVEN MOORE, M.Sc., M.D. (Vict.); Assistant Lecturer and Demonstrator of Pathology, Owens College. Edited and annotated by A. SHERIDAN DELÉPINE, M.B., C.M. (Edin.), B.Sc.; Professor of Pathology in Owens College and Victoria University, Manchester. London: Charles Griffin & Co. 1899. Large quarto. Pp. 111.

NOT since 1853, when Dr. Otto Funke, "Privatdocent der Physiologie an der Universität Leipzig," published his most artistic Atlas of Physiological Chemistry, has so valuable a contribution to the subject been made as the work which now lies before us.

The Atlas proper consists of thirty-six beautifully

executed plates, comprising 167 figures, many of which are printed in colours. In addition, several explanatory figures are inserted in the text which follows the Atlas and runs to 111 pages of large quarto size.

The work deals almost exclusively with the microscopical character of the sediments formed by the deposition of certain of the constituents of the urine when it is allowed to stand. This deposition takes place very rapidly sometimes, at other times slowly. Dr. Delépine points out that it is often desirable to examine the urine immediately after it has been voided and before any sediment has been formed in the usual manner.

It may be well to mention that the German original of this important work was published at Munich in November, 1897. On its appearance, Messrs. Griffin, who had long contemplated the publication of an Atlas of Urinary Sediments, and had placed themselves in communication with Dr. Delépine on the subject several years ago, expressed the desire that Dr. Delépine should edit for them an English edition of Dr. Rieder's work. After securing the able co-operation of Dr. F. C. Moore, who undertook the work of translation, Dr. Delépine agreed to edit the English version.

Dr. Hermann Rieder possessed the great advantage of being Assistant in the Medical Clinic of Geheimrath von Ziemssen, who, with his usual courtesy, placed the material of the clinic at his disposal. The illustrations throughout were carefully prepared by the University draughtsman from original specimens, and the Munich publishers spared neither trouble nor expense to obtain faithful reproductions of these drawings. The lithographs have been executed by the lithographic firm of Julius Klinkhardt, of Leipzig, and reflect much credit on the artistic skill of that establishment. The sediments have been drawn as seen with a moderately high power of a Zeiss microscope—namely, a D. objective and No. 2 ocular. As far as possible the same magnification has been employed, so as to admit of comparison of one specimen with another.

But it would not be accurate to suppose that this Eng-

lish edition is a mere translation. On the contrary, while none of Dr. Rieder's statements have been materially altered, Dr. Delépine has not hesitated to modify the original in the way of abbreviation so as to avoid needless repetitions, while numerous additions have been made to the translation of the German text in the shape of annotations for which Dr. Delépine is responsible. These are distinguished from the original text by being enclosed within square brackets. Most of these notes, as well as sixteen out of twenty figures which have been added to the text, are derived from records of over 4,000 urinary analyses and microscopic examinations made by Dr. Delépine himself in the course of some eight years.

In the text reference is made to the characters, the mode of occurrence, and the pathological significance of urinary sediments. With regard to the inorganic or crystalline sediments, some of the micro-chemical reactions have been given, since the crystalline form alone cannot in many cases be relied upon for diagnosis.

As we write we have the advantage of having before us Dr. O. Funke's Atlas, in which the lithographs are of extraordinary finish and delicacy. Dr. Rieder's Atlas bears the ordeal of comparison well. The "fields" are large, which is of course a gain. Their diameter is 63mm. compared with 50mm. in Funke's. Taken together, the two atlases give a faithful and invaluable representation of urinary deposits, and reflect credit on the German school of microscopical research in clinical medicine.

The price of Dr. Rieder's and Dr. Delépine's Atlas is eighteen shillings. It is well worth the money.

The Pocket Case-Book for District and Private Nurses.

London: The Scientific Press, Ltd. 1899. Demy 16mo.

Pp. 50.

THIS is a very useful little book, enabling the nurse to give every detail of her patient's condition for the doctor's inspection, or for the verbal report required from the district nurse on her return home, and forming a complete history of her case for future study and reference. We, however,

venture to suggest that the price—a shilling—for the record of fifty cases will not tend to make it popular. We have just seen a district nurse's sheet of fifty cases attended in the month of June alone.

On the Relation of the Nervous System to Disease and Disorder in the Viscera. Being the Morison Lectures delivered before the Royal College of Physicians in Edinburgh in 1897 and 1898. By ALEXANDER MORISON, M.D. Edinburgh and London: Young J. Pentland, 1899. Pp. 132.

THESE lectures have been already published in the *Edinburgh Medical Journal*. The subject is a very large one, and exceedingly indefinite. It is treated by the author under the headings, Anatomy, Physiology, Pathology, Disorders of Visceral Sensibility, and Disorders of Visceral Motion, with a concluding chapter on Body and Mind—a pretty wide subject. There are in each lecture many interesting observations, particularly those dealing with the minute anatomy of the nerves and ganglia; but the greater part of the work is of a highly speculative character, and hardly admits of a summary.

A very important discovery is that of the existence of vaso-motor nerves supplying the cerebral vessels, which Dr. Morison has made by means of a modified hæmatoxylin method. Another interesting discovery is that of the spiral course of the nerves in the uterus, heart, and probably in other organs whose size is apt to vary within wide limits. When the organ is contracted the nerve-fibres fall into a close spiral, which becomes stretched out as the organ enlarges.

From his researches Dr. Morison doubts the truth of the commonly-received view that the rhythmic contractions of the heart have their origin in the muscular tissue itself—"The conclusion seems warrantable, until indubitable proof to the contrary has been adduced, that at least in the fully-developed organs of more complex animals, *persistent* rhythmicity has its proximate and always subordinate centres in the efferent stream of innervation."

For the many other points of interest in these lectures we must refer our readers to the work itself, which will be found readable and suggestive in every page. The text is illustrated by 39 figures, which are mostly reproductions of micro-photographs of the author's preparations. With few exceptions they are very indistinct, and show either very imperfectly or not at all the points they are said to illustrate. Indeed, they serve only to confirm our opinion of the inferiority of photographs to good drawings for the reproduction of microscopic appearances.

Scientia. Exposé et Développement des Questions scientifiques à l'Ordre du Jour.

It is with much pleasure that we call the attention of our readers to this serial publication, which consists of short monographs, each of about 100 pages, dealing with the most important scientific questions which are of present interest. The works are divided into two series—one treating of physico-mathematical subjects, the other dealing with biological questions. Among the names of the editors we find those of d'Arsonval, Lippmann, Moissan, Poincaré, Balbiani, Marey, and Milne Edwards. The subjects are treated not dogmatically, but while an orderly account is given of the development and literature of each subject, every stage in this development is submitted to a rigorous criticism and a constant control by experiments. Each subject is dealt with by a writer of acknowledged authority, and if we may judge from the volumes we have seen, we believe that the work will prove one of the highest value.

The following are some of the volumes which have already appeared or are in preparation:—In the physico-mathematical series the Zeemann phenomenon, by Cotton; Stereo-chemistry, by Freundler; Determination of the Ohm, by Lippmann; Maxwell's Theory and Hertzian oscillations, by Poincaré; the new Gases, by Raveau; the Cathode Rays, by Villard. While in the biological series we find the Coagulation of the Blood, by Arthus; Molecular Actions in the Organism, by Bordier; Irrita-

bility in the Animal Series, by Courtade; Fecundation in Animals, by Delage and Labbé; Fecundation in Vegetables, by Poirault; the Nerve-Cell and the Neuron Theory, by Van Gehuchten; and many others of no less interest.

We have received three volumes of the biological series. No. I. is entitled *La spécificité cellulaire, ses conséquences en Biologie générale, par L. Bard*.—In this essay the question is discussed whether the different kinds of cells can change one into the other, or whether each kind of cell owes its properties not to accidental conditions, but to pre-existent properties transmitted by heredity, so that each cellular species is fixed and unalterable. The author holds the latter view in the strongest manner, and develops his position and the bearings it has on pathology and biology with the greatest clearness and attractiveness.

No. IV. *Les Actions moléculaires dans l'Organisme, par H. Bordier*.—This volume deals with some of the most interesting problems which are at present agitating the minds of physiologists. Whether absorption, secretion, the separation of the lymph, the exchange of gases in the lungs, can be explained by known physical laws, or whether they require the intervention of so-called vital or protoplasmic forces, which are at present unknown, is a problem of the utmost importance, and one on which different physiologists hold very different views. In Professor Bordier's able monograph such subjects are dealt with as elasticity, adhesion, surface tension, osmosis and osmotic pressure, capillary phenomena, gaseous adhesion, solution of gases, diffusion and osmosis of gases. These subjects are treated of in their relation to physiology, muscular contraction and the electrical changes which accompany it, secretion of urine, absorption from the stomach and intestines, &c.

No. V. *La coagulation du Sang, par M. Arthus*.—There are few subjects which are more difficult to understand than the present condition of the coagulation question. There are nearly as many conflicting theories as there are writers, and a student turned adrift among these is greatly puzzled in finding his way through them. Of the numerous workers on the question there are few of greater eminence

than Professor Arthus, and no one who is more capable of giving a good account of the present state of the subject. In his essay he gives a brief sketch of what was done up to 1890, and starting from this date he discusses in successive chapters the import of lime salts, of fibrin ferment, the incoagulability of the blood caused by intravascular injection of proteoses, the seat of formation and the nature of the anticoagulating substance produced by this injection, the natural or acquired immunity against intravenous injection of proteoses, the anticoagulating power of the serum of eels' blood, of leech extract and of tissue extracts, and finally, the substances which can produce intravascular coagulation, nucleo-albumins, snake-poison, artificial colloids.

We do not know any other work in which the whole subject is so clearly treated, and the critical remarks of the author are always marked by judgment and fairness. The work will be a real boon to everyone engaged in making up this most difficult but important subject.

Manual of Human Physiology. By LEONARD HILL, M.B.
London: Arnold. 1899. Pp. 484.

THE design of this book and the class of readers for whose use it is intended, are best given in the words of the author. He says—"The author has tried to design this book so as to give the general reader, and one who has not received a scientific education, some insight into the wonderful complexity of structure and function which, taken together, compose a living man. He has therefore endeavoured to avoid as far as possible the use of technical terms, and has sought to lead the student to train himself by observation, dissection, and the performance of simple experiments."

"As a text-book this volume may be found suitable for students training to qualify as teachers; for nurses undergoing hospital training; for the higher classes of schools and polytechnics. The medical student may find it of some value as an introduction to the more advanced study of physiology. A student who has mastered this book

should be able to pass the examinations at South Kensington, both elementary and advanced, and the University Local Examinations."

The earlier chapters deal with a number of preliminary considerations—as matter, weight, density, energy, gases, liquids and solids, elements and compounds, electricity, atmospheric pressure, life, protoplasm, sun-energy, cell physiology, and differentiation of structure and function.

There are then several chapters on anatomy, in which the skeleton, the joints, the connective tissues and the muscles are described. We then have the physiology of muscle and the mechanics of walking and some other special movements, and then the different physiological functions are described in the usual order, beginning with the blood and terminating with the special senses and speech. A number of easy, practical exercises are given, and the text is illustrated with 173 illustrations.

It is unnecessary to say that a work of this kind, written by a physiologist of Dr. Hill's eminence, is well done, that the information is exact, well up to the present level of science, and strikingly put to the reader. There is nothing in its pages which the student in advancing to larger works will have to unlearn, but he will find that by mastering this manual he has laid a solid and secure foundation for further study. We would cordially recommend the book to all those who are commencing their physiological work.

Materia Medica, Pharmacy, Pharmacology, and Therapeutics. By W. HALE-WHITE, M.D., F.R.C.P. Third edition. London: J. & A. Churchill. 1898.

DR. HALE-WHITE has made a reputation for his excellent text-book not only by his promptness in publication shortly after the issue of the "Pharmacopœia," but also by his excellent arrangement of the subject and the working out of the details.

The principal difference between his book and those of other well-known authors is the arrangement of the organic materia into therapeutic groups.

His pages on Pharmacology and Therapeutics are lucid and written in such a way as to be of real help to the student.

There are 613 pages in the book, and Appendix I. gives a list of the vegetable materia medica arranged according to the natural orders.

The Students' Practical Materia Medica. By GRACE HAXTON GIFFEN. Second edition. Edinburgh: E. & S. Livingstone. 1899.

THIS book, written by a lady, consists of ninety-six pages, seven chapters, and three blank pages for notes. The author states it is intended for a pocket manual, "and should be read with the specimens before the student, and will be found useful as a supplement to a text-book on materia medica when studying the Pharmacopoeia." It gives definitions of the preparations, and classifies them, giving their doses. These definitions might, perhaps, be revised—for instance, such a definition as "spiritus, a liquid preparation made by maceration and distillation," can hardly be called correct.

In Chapter VI. the classification of the salts under their acid radicles will be found useful to the student. In Chapter VII. the tests for alkaloids and organic acids require revision—*e.g.*, test for strychnin "purple:" carbolic acid with tinctura ferri perchloridi gives a blue colour.

Class Book of (Elementary) Practical Physiology, including Histology, Chemical and Experimental Physiology. By DE BURGH BIRCH, M.D., C.M., F.R.S.E. London: Churchill. 1899. Pp. 273.

THIS book contains an enormous amount of information packed into very small compass. It is a complete elementary handbook for the physiological laboratory, wanting only those parts of the experimental work in which vivisectional methods are necessary.

The sections on histology and on physiological chemistry are exceedingly good, and comprise everything that a

student can require. But the greatest interest of the work is found in the part on experimental physiology, for here the author's ingenious and original apparatus is described. This apparatus was designed by Professor Birch so as to combine simplicity, efficiency, strength and cheapness. It is very ingenious, and well worthy of the attention of all those who have to teach practical physiology to classes of students. We would particularly call attention to the arrangement for distributing to the different tables the time tracing given by a central clock or tuning fork, described and figured at page 208.

There are a few inaccuracies in the text, as, for instance, where on page 17 we are directed to raise the sternum of the frog by *dividing the ribs* on each side.

On page 185 the voltage of a Daniell cell is given as 1.9.

On page 196 coccygeo-iliacus is spelt coccigeo-iliacus.

In the experiment on page 212 to show that the extensibility of muscle increases during contraction does not seem quite conclusive. What is demonstrated is that the *extension* is greater *after* than before contraction, and this may be due merely to the fall of the weight with which the preparation is loaded.

On page 248 the student is directed to bathe the auriculo-ventricular junction of the frog's heart with *tincture* of atropin. The alcohol would exert a destructive action on the vitality of the organ.

Such instances, however, detract but little from the general excellence of the work. The book will be found invaluable by students and teachers of practical physiology, and even to practitioners it will prove very useful, as it gives all necessary directions for the examination of the urine, blood, digestive products, for the use of the sphygmograph, and for many other operations daily required in clinical medical work.

PART III.

SPECIAL REPORTS.

REPORT ON PRACTICE OF MEDICINE.

By **HENRY T. BEWLEY, M.D. Univ. Dubl.; F.R.C.P.I. ;**
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Forensic Medicine and Hygiene, Trinity College, Dublin.

- I. ON LITTEN'S DIAPHRAGM PHENOMENON.**
- II. BACTERIOLOGY AND CLINICAL MEDICINE.**
- III. DIAGNOSTIC POINTS CONNECTED WITH THE PUPIL.**
- IV. ON THE USE OF MAGNESIUM SULPHATE IN DYSEN-
TERY.**
- V. THE LOCAL APPLICATION OF GUAIACOL.**
- VI. HYDROCHLORIC ACID IN DIGESTIVE DISORDERS.**
- VII. THE BACTERIOLOGY OF DISEASE OF THE URINARY
TRACT.**
- VIII. THE USE OF POTASSIUM CHLORATE.**
- IX. THE TREATMENT OF CORYZA.**

I. ON LITTEN'S DIAPHRAGM PHENOMENON.

Dr. R. Cabot gives his experiences of this phenomenon, his paper being based on 220 cases:—

If a person lies with the feet pointing straight towards a window (cross-lights being excluded), and the chest be exposed, the following phenomenon can be observed during forced respiration; along both axillæ a sort of shadow is seen to descend during deep inspiration from about the seventh to about the ninth rib, passing up again during expiration. It is best seen in spare, muscular young persons of either sex. The phenomenon can be seen in all healthy persons except those who are very fat, and those who cannot or will not breathe deeply. The phenomenon is nearly or entirely absent in the following conditions:—(1) Fluid or air in the pleural cavity; (2) Obliteration of the pleural cavity by adhesions; (3) Advanced emphysema of the lungs; (4) Pneumonia of

the lower lobe; (5) Intrathoracic tumours low down in the chest. Subdiaphragmatic tumours or fluid accumulations do not impair the phenomenon unless they are of very great bulk. Paralysis of the phrenic nerve is also mentioned as a possible cause for absence of the diaphragm shadow. The phenomenon is briefly explained thus: At the end of expiration the diaphragm lies flat against the inside of the thorax; during inspiration it "peels off," and allows the lower edge of the lung to come down into the chink between the diaphragm and thorax. This peeling off corresponds with the entrance of the complementary air during forced inspiration. In quiet breathing it is rarely to be seen. Litten observes no difference in the distinction of the shadow on the two sides of the chest. The importance of the phenomenon in clinical medicine is due to the following facts:—It gives us an easy and accurate measure of the volume or vital capacity of the lungs, enabling us to dispense with the use of the spirometer and of measurements of chest expansion. If the shadow moves less than $2\frac{1}{2}$ inches Litten considers the condition abnormal. Such abnormality may be due to general debility, emphysema, upward pressure of the pregnant uterus. Observations conducted recently at Massachusetts resulted as follows:—In 102 normal persons the excursion was practically the same, and averaged about six centimetres. In eleven cases of pleuritic effusion the shadow was entirely absent on the affected side. In five cases of old pleurisy with adhesions, and in three of acute dry pleurisy the shadow was absent on the affected side. Six cases of bronchitis with emphysema were examined; two of these showed no shadow on either side, two showed a slight shadow on the right side only, and the remaining two showed a slight shadow on both sides. Thirty cases of pulmonary tuberculosis were examined; in only one case were the movements of the diaphragm normal. Even in very early cases in which a few râles at one apex were the only physical signs there was distinct limitation in the movements of the diaphragm. In a case of cirrhosis of the liver in which the organ was palpable over a space a hand's breadth in width below the ribs and to the fifth rib above, the shadow could still be seen to move with respiration. Similar appearances were noted with respect to the spleen in a case

of leukæmia. On the other hand, a very large collection of ascitic fluid in a case of uncompensated valvular disease made it impossible to detect any diaphragm shadow. It is pointed out that the diaphragm shadow seems to render unnecessary the use of the X-rays in the investigation of diaphragm movements.—*Med. News*, April 15, 1899, and *Med. Chron.*, June, 1899.

II. BACTERIOLOGY AND CLINICAL MEDICINE.

Dr. Cave (Bath) writes an interesting paper on this subject. He calls special attention to the information to be derived from making an examination of the blood. Information may be gained as to the presence of typhoid fever by Widal's method, and also living organisms may be cultivated from the blood. For the latter purpose he does not approve the commonly employed method of obtaining a little blood—viz., by pricking the finger with a needle or small lancet, but much prefers the following procedure:—"Have ready," he writes, "an ordinary serum or hypodermic syringe of 10 c.c. capacity, with an asbestos piston, which has been thoroughly cleaned, sterilised by boiling, and wrapped in sterilised filter paper. Also three or more tubes of ordinary meat peptone agar. Most carefully sterilise the skin of the patient's elbow at the bend, select a vein made prominent by compression higher up the arm, and plunge the needle of the syringe through the skin and then into the vein, the needle pointing either upwards or downwards, as is most convenient. On gently withdrawing the piston it is quite easy to draw off 7 or 8 c.c. of blood without risk of extraneous contamination. This is immediately distributed over the surface of the tubes, which are then incubated at 37° C. If preferred, the medium in the tubes can be first liquefied and cooled to 40°, the blood added to the liquid agar, and the shaken mixture poured flat in a Petri's dish. By this means, which involves no danger to the patient, and is as painless as an ordinary hypodermic injection, it is possible to demonstrate the presence of bacteria in the blood in quite a number of infections. It is of service in cases of septic infection, such as ordinary traumatic surgical or puerperal septicæmia or osteomyelitis, and it often gives positive results in the later stages of pneumonia. But it is

of pre-eminent value in the more obscure septic conditions which come under the notice of the physician, in cases, that is, of kryptic infection and in malignant endocarditis. In both these conditions I have been enabled to settle the diagnosis with absolute certainty in cases otherwise obscure. All physicians are familiar with cases of septicæmia in which even the *post-mortem* examination may fail to determine the point of inoculation; and if the lesions have not gone on to pyæmia, if none of the more conspicuous embolic phenomena nor endocarditis, nor other localised septic inflammations, have produced visible effects, the whole case may be an enigma. But in these virulent cases the bacteriological examination of the blood by the method described above will certainly elucidate the mystery."

He has also derived much information from Quincke's lumbar puncture, which he carries out as follows:—

"I generally use an ordinary serum syringe, the same as for the abstraction of blood from a vein, and I prefer this to the bottle aspirator. The needle should be not less than 6 c.c. long, and 1 to 2 mm. in diameter. The object is to tap the spinal canal below the termination of the spinal cord, in the region of the cauda equina. The nerve-roots floating in the cerebro-spinal fluid will be pushed aside by the point of the needle and run no risk of puncture. The syringe and patient's skin being carefully sterilised, as before, the patient lies on his side with the spine flexed and the knees drawn up on the abdomen. The needle is inserted either in the third or fourth lumbar interspace, or in the lumbo-sacral junction, as recommended by Chipault, and now more usually practised. It is inserted close beneath the spinous process, and in the adult a little to one side of the middle line, to avoid the dense interspinous ligament, and pushed slightly upwards and forwards along the under surface of the spine of the vertebra, for a depth in the adult of 5 or 6 cms. Gentle suction with the syringe will, as a rule, easily withdraw a few c.c. of fluid for examination. The fluid can be sown on agar, inoculated, or examined direct after centrifugalising. It is in cases of meningitis that this method is of most avail, but it has also given positive results in acute anterior poliomyelitis. In acute purulent menin-

gitis, whether the so-called idiopathic form from pneumococcal infection, or the epidemic variety, or in cases secondary to disease of the petrous bone, it affords most valuable information.

“A negative result must be allowed no weight whatever, and no inference as to the absence of disease can be deduced therefrom. For example, in purulent meningitis from ear disease, the free communication of fluid from skull cavity to spinal canal may be prevented, and a clear, sterile fluid withdrawn, but this is very exceptional. Lichtheim has laid down a rule, that no patient should be trephined for the cerebral complications of ear disease unless the probable absence of meningitis has been established by this method.

“A positive result, demonstrating the presence of pyogenic organisms in the fluid, is conclusive of meningitis, though the inflammation may be of slight extent and to the naked eye entirely confined to the cerebral meninges.”

He has not found the lumbar puncture of any use for purposes of treatment. On the other hand, he regards it as perfectly innocuous.—*Ed. Med. Jour.*, Aug., 1899.

III. DIAGNOSTIC POINTS CONNECTED WITH THE PUPIL.

Contracted Pupil.

1. Miosis from irritation. This condition is normal when the eye is exposed to light, and when it accommodates; it is pathological in—

- (a) Diffuse inflammatory conditions of the brain and its membranes, which cause a direct stimulation of the 3rd nerve.
- (b) Tumours in the neighbourhood of the centre which presides over contraction (anterior corpora quadrigemina), or in the neighbourhood of the centre of the 3rd nerve, or in its fibres.
- (c) In the first stage of apoplexy, of epileptic, and of hysterical attacks.
- (d) In cases of hæmorrhage in the pons.
- (e) After long-continued accommodation (fixing the eyes upon some work or close to them) caused by spasm of the muscle of accommodation and of the sphincter pupillæ.

- (f) Inflammatory conditions of the anterior portion of the eye (keratitis, iritis, cyclitis, &c.).
- (g) The use of eserine, pilocarpin, muscarin, nicotine, opium.

2. Paralytic contraction (dependent on the sympathetic nerve) occurs in—

- (a) Injuries, apoplexy, tumours, inflammations of the cervical cord.
- (b) Mediastinal tumours, carcinoma of the œsophagus.
- (c) Paralysis of the sympathetic.

Dilatation of the Pupil.

1. Paralytic dilatation (dependent on the 3rd nerve) occurs in—

- (a) Hæmorrhage or tumour in the floor of the aqueduct of Sylvius.
- (b) In diseases which affect the fibres of the 3rd nerve anywhere in their course—*e.g.*, sinus-thrombosis, glaucoma, &c.
- (c) The use of atropine, duboisine, daturine, hyoscyamine, hyoscin, homatropine.
- (d) Crushing of the eyeball.

2. Spastic dilatation (dependent on the sympathetic) in—

- (a) Fright.
- (b) Accumulation of CO₂ in the blood.
- (c) In the fully-developed epileptic and eclamptic attack.
- (d) Tumours and inflammations of the spinal cord (*e.g.*, in the early stage of tabes).
- (e) Reflex action from the presence of worms in the intestine, in lead, and biliary colic.
- (f) In tumours of the neck.
- (g) Melancholia and mania.
- (h) The use of cocaine.

Points about the Pupillary Reaction.

1. In miosis due to irritation, light, accommodation, convergence and eserine cause still greater contraction; atropine causes dilatation.

2. In miosis from paralysis, light, accommodation, convergence and eserin cause contraction; atropin has but little effect.

3. In paralytic mydriasis there is no reaction with light, accommodation or convergence; eserin acts but very feebly.

4. In spastic mydriasis, light, accommodation, convergence and eserin cause contraction.

Abnormal Varieties of Pupillary Reaction.

1. Argyll-Robertson pupil occurs in tabes and in general paralysis; it occurs, though rarely, in senile dementia, paranoia, multiple sclerosis, syphilis of the central nervous system, and epilepsy.

2. Hemianopic pupil-reaction (the pupil contracts when one half of the retina is illuminated, but not when the light falls on the other half) points to a lesion between the nucleus of origin and the chiasma.

3. Cortical reflex of the pupil (Haab); the dilated pupil (the patient being in a dark room) contracts when the mind thinks of a strong light.—Dr. J. Pfister, *Correspondenzbl. f. schweitzer Aerzte*, 15th Jan., 1899; and *Deutsche med. Zeitung*, April 13th, 1899.

IV. ON THE USE OF MAGNESIUM SULPHATE IN DYSENTERY.

Dr. Buchanan (Indian Medical Service) writes an interesting paper based on 102 cases of dysentery which have come under his care.

In acute sthenic cases he finds ipecacuanha act like a charm; in chronic cases he does not find it useful. On the other hand, he finds magnesium sulphate of the greatest value in all kinds of attacks of dysentery. He believes it acts by washing out the large intestine and thus removing the causes of inflammation and the inflammatory products. He uses the following mixture:—

Magnesium sulphate	-	-	℥ii
Dilute sulphuric acid	-	-	℥iii
Tincture of ginger	-	-	℥iii
Water to	-	-	℥viii

And gives ℥i-ii of this every one or two hours. It is

necessary to secure free, gentle purgation. As long as the stools remain yellow and loose or soft, the drug should be continued for one or two days after the mucus and blood have entirely disappeared. The quantity may then be reduced. If the stools become thin and watery, the mixture should be stopped at once.

He believes that if care be taken to keep every case in hospital till every trace of mucus has for some days completely disappeared from the stools, chronic relapsing cases will be much more rare than they are.

As to diet, he allows boiled milk 1 pint, sago 8oz., and soup. This low diet is rigorously enforced till the stools have become solid, and on the first sign of a relapse (a recurrence of blood or mucus in the stools) a return is made at once to sago and milk.

More or less full notes of his 102 cases are given; in them the treatment acted admirably, and there was only one death.—*Indian Medical Gazette*, No. 12, 1898.

V. LOCAL APPLICATION OF GUAIACOL.

Popow (*Russki Med. Vestnik.*, Feb., 1899) reports a number of observations of the action of guaiacol, applied locally. In 40 cases of typhoid fever, an average of 7 to 10 drops of guaiacol, either pure or mixed with equal parts of oil, were rubbed in on the shoulder. This was invariably followed within an hour by a fall of temperature lasting from two to three hours, accompanied by excessive perspiration, which weakened the patient to a very great extent. The pulse also became rapid and weak. In a few cases, where larger doses were used, the perspiration was followed by quite severe chills. In children, even very small doses had the same bad effect. In severe cases the temperature could not be lowered by guaiacol, although perspiration and chills were produced by even small doses. The same unfavourable results followed the use of guaiacol in relapses. In cases of typhoid fever, complicated by catarrhal and croupous pneumonia, the application of guaiacol was found to exert an evil influence. In croupous pneumonia the same pernicious effect was noticed. In erysipelas the

application was made in 23 cases. Here the results proved to be very beneficial. The large doses found necessary by the author were very well tolerated by the patients, excessive perspiration and chills being absent. The duration of the disease was limited to four or five days. In chronic pulmonary tuberculosis the effect was prejudicial. In acute rheumatism the only effect noticed was an amelioration of the pain. The author concludes with the following statements: 1. Guaiacol, applied locally in fevers, is a powerful antipyretic. 2. In typhoid fever, croupous pneumonia and pulmonary tuberculosis, the lowering of the temperature is followed by perspiration and chills, which weaken the patient and reduce the heart's action. Besides, it does not shorten the duration of the disease. 3. In erysipelas the application of guaiacol had a favourable influence on the course of the disease. 4. In acute rheumatism it is a good local analgesic.—*Internat. Med. Magazine*, Ap., 1899.

VI. HYDROCHLORIC ACID IN DIGESTIVE DISORDERS.

Dr. Tournier finds hydrochloric acid very useful in cases of lenteric diarrhœa accompanied by diminished acidity of the stomach contents. These patients had very slightly accentuated gastric disorders. One observes neither palpitation nor swelling, neither pain nor flatulence. Gastric movements are preserved and even exaggerated, and the chemical analysis alone shows that the fault lies in a lack of acid in the contents of the stomach. But there is always a lenteric diarrhœa occurring generally after each meal, and this disappears in four or five days under the influence of the acid treatment, although it had resisted all other remedies. A second group of cases, where the use of large doses of hydrochloric acid produces good results, is constituted by certain gastric conditions with functional hypochloridia, which may be observed in neurasthenic patients, and shows itself especially in alimentary vomitings with no burning sensations nor accompanied by soreness. The use of hydrochloric acid in these cases does not fail to control these vomitings. Lastly, this drug is especially useful in cases of gastric catarrh with hypochloridia of alcoholic origin, when the troubles consist more especially of alimentary vomitings, distensions, sensations of weight after meals, insomnia and

loss of appetite. The conditions which might constitute a formal contraindication to the use of hydrochloric acid are those in which the gastric troubles are accompanied by a pronounced hyperæsthesia of the mucous membrane of the stomach for all acids. It is easy to understand the favourable influence exercised by hydrochloric acid in cases of gastric catarrh in conjunction with hypoacidity; indeed, physiology teaches us that this acid favours the secretion of the gastric juice, the emptying of the stomach and the disappearance of mucus; further, that it acts as an antiseptic, and lastly that it is an excitant of the pancreatic secretion. It is, above all, this last property which Tournier invokes in order to explain the curative action of hydrochloric acid in cases of lenteric diarrhoea.—*Internat. Med. Magazine*, Dec., 1898.

VII. REPORT OF THE BACTERIOLOGICAL EXAMINATION OF 52 CASES OF DISEASE OF THE URINARY TRACT.

Dr. Max Melchior from extensive observations arrives at the following conclusions:—

1. *Bacterium coli* is the most common cause of bacteruria with acid urine.

2. Bacteruria may also be caused by bacteria which decompose urea.

3. Bacteruria may be of renal or of vesical origin. In the latter case the source of the infection is often the prostate.

4. The *Bacterium coli* is the organism which is most frequently found in cystitis, pyelitis and pyelonephritis.

5. In many cases the cystitis is associated with acid urine.

6. Even organisms which decompose urea may cause cystitis with acid urine.

7. In women cystitis not unfrequently arises from infection of the bladder with the *B. coli* per urethram.

8. The *B. coli* may be overpowered and destroyed by other urea-decomposing organisms.

9. It appears that the *B. coli* can be conveyed by the blood from the intestinal canal to the urinary tract, and may then set up cystitis and pyelitis.

10. Urea-decomposing organisms occasionally cause

pyelonephritis, unaccompanied by cystitis, and with acid urine.—*Deutsche med. Zeitung*, December 22, 1898.

VIII. ON THE USE OF POTASSIUM CHLORATE.

Dr. Henry Ashby (*Ed. Med. Jour.*, January, 1899) calls attention to the diminished doses of this salt now generally ordered as compared with those formerly recommended. He has tried it in scarlatina, diphtheria, tonsillitis, and various forms of stomatitis, but cannot say that he has found it of much, if any, use in any disease except in ulcerative stomatitis; in this affection its effects are most striking.

Concerning the pathology of this disease, and how far we can admit its claims to be considered a "self-standing disease," there is not much to be said. It does not occur in infants prior to the eruption of the teeth; that children who are attacked are mostly in a low state of health; and that this disease appears to be infectious, or, at least, occurs in small epidemics. Various searchers have from time to time proclaimed the discovery of a specific organism in the discharges from the gums, the most recent being Bernheim, who, in thirty cases, found a motile bacillus and a spirochæte. It is possible that more than one disease may be included under the name of "ulcerative stomatitis."

The attack is ushered in with fever; there is tenderness of the gums and teeth, with excessive salivation; the lesions are confined to the gums and cheek, and possibly the tongue. The gums are swollen, often very markedly so; they readily bleed; a foetid purulent discharge issues from their edges where they come in contact with the teeth. There is usually, also, a sharply cut ulcer, perhaps half an inch to an inch in diameter, with a yellowish base, opposite the lower molar of one side; the ulceration may involve the fissure between the gums and the cheek, and also the tongue on the corresponding side. In those cases where there is this form of stomatitis present in young children who have only cut their incisor teeth, the only part of the gums affected is that around the teeth, and there may be a yellowish infiltration of the surface of the mucous membrane of the lip which comes in contact. The position of the deep ulcer found opposite the lower molars is no doubt determined by the action of the buccinator muscle in chewing. This muscle

presses the bolus of food between the molars, and the friction of the molars against the mucous membrane gives rise to the ulcer. This friction is the exciting cause. In a healthy condition of the mucous membrane it does not occur. The disease occurs equally in children with healthy as with carious teeth.

In such cases, chlorate of potassium given in 3 to 5 gr. doses (child 3 to 7 years) every four or six hours, so that the daily dose is 20 to 30 grs., acts like a charm, and in a day or two a marked improvement is manifest. The ulcer becomes cleaner, the gums less swollen, the fœtor of the breath disappears, there is less tendency to bleed, and in a week or so the child is practically well. The salt appears to be secreted in the saliva very soon after being taken. It acts better given internally than applied locally.

IX. THE TREATMENT OF CORYZA.

Dr. Nassauer (Munich) finds that in permanganate of potassium he possesses an admirable remedy for this troublesome and common complaint. A little of the permanganate is dissolved in warm water, just enough being used to give the solution a faint pink colour. After the nose has been cleansed (by vigorous blowing the dilute solution is used as a nose-wash, the solution being allowed to flow or else injected first into one, then into the other nostril; it flows out through the mouth or through the other nostril. Then the nose is cleansed as far as possible with cotton-wool dipped in the same solution. In this way, as far as the cotton-wool can reach, all mucus and infectious material is removed. Then some dry cotton-wool is inserted into each nostril, and while the head is held backwards the permanganate solution is poured into the nostrils so as to soak the wool. The plugs are allowed to remain in the nose for about an hour, and cause no inconvenience. They then are easily removed by blowing the nose.—*Klin. therap. Wochenschr.*, January, 1899.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

*Notes on Four Cases of Syringo-myelia.** By LEWIS MORE
O'FERRALL, L.R.C.P.I.; L.R.C.S.I.

I PURPOSE bringing forward the notes of four cases of syringo-myelia. Three of the cases I have seen myself, the other case was the first case of the kind ever recorded in Ireland, and was exhibited by Drs. Coleman and O'Carroll at the Royal Academy of Medicine in 1893.

Before, however, going into the notes of the cases in detail it may be well to briefly describe the commoner clinical features of the disease, and to say a few words about its pathology, as I am sure many of us here have never had a chance of seeing a case of this rare but interesting affection.

The term syringo-myelia was first used over fifty years ago to designate a condition attended by the formation of cavities distended with fluid situated in the spinal cord, and the view was put forward by Virchow and Leyden that these cavities were always due to a dilatation of the central canal of the cord. Assuming this hypothesis to be correct, the term hydro-myelia was suggested as more suitably describing the pathological condition present. It was soon found, however, that the view held by Virchow and Leyden was erroneous, and it was moreover discovered that not only did the cavities form quite independently of any dilatation of the central canal, but that in some cases the central canal was itself quite occluded.

These cavities existing in the spinal cord independently of any dilatation of its central canal constitute the disease which we now term syringo-myelia, and the cavities may be formed in two ways—first, by the formation and subsequent breaking down of a gliomatosis; and secondly, by a morphological defect in the development of the cord.

The posterior columns of the cord are, I believe, the last to be

*Read before the Medical and Scientific Society of the Medical School, Cecilia-street, on June 5th, 1899

developed, and in some cases an imperfect development occurs at this part, which results in the formation of a cavity. In such cases other developmental defects usually co-exist, such as an encephalocele or an absence of the cerebellum.

Cases due to primary mal-development are of course congenital, but cases due to a gliomatosis may not appear until adult life is reached, or even until a much later period. Traumatism seems also in some cases to play an important part as a determining factor in the production of the disease.

So much for the ætiology and pathology of the subject. We will now turn to its clinical aspect.

The symptoms of this disease are perhaps more diffuse and more heterogeneous than those of any other known affection which human flesh is heir to. But for the sake of brevity and intelligibility I think I may classify them under the following four headings:—

1. *Trophic Changes.*—Which include, first, the strange arthropathies which occur, and which have been compared by some to the “Charcot joint” which is so characteristic of locomotor ataxy; and secondly, the formation of “*Morvan's painless whillows*,” which may entirely destroy the phalanges of the fingers and cause them to drop off without pain.

2. *Sensory Disturbances.*—Under this heading we get a sign almost pathognomonic of syringo-myelia and known by the term “*sensory dissociation*.” It is that while the patient retains a *perfect* sense of ordinary *tactile* sensation, yet over certain areas he entirely loses his sense of *pain*, and his *sense of distinguishing* the temperature of bodies. If pricked with a pin he will feel the pin as a touch, but will experience no pain while the pin is being driven through his flesh, and he may also be badly burnt over the areas where this phenomenon of sensory dissociation exists without feeling the least pain or being in any way conscious that he is being burnt.

3. *Muscular Atrophies.*—Under this heading we get an example of the heterogeneous nature of the disease, for we find various groups of muscles atrophying which have no known nerve supply in common, and which apparently have no direct connection with one another, probably due to direct pressure upon the anterior cornua or to an interference with the blood supply to the cells in the anterior cornua.

I may mention that these signs of muscular atrophy, as also the other phenomena of the disease, are chiefly confined to the upper limbs, for the simple reason that the cavities in the cord are for the most part in its cervical region, and hence the lower limbs are

not implicated. If, however, cavities do form low down in the cord, then the lower limbs become affected in an exactly similar manner to the upper ones, and the sphincters may be engaged. Of course when cavities form in the cervical region their pressure when distended with fluid upon the lateral columns of the cord may cause a descending sclerosis, and in such a case we should get spastic symptoms in the lower limbs. This may be only unilateral, or we may get complete "spastic paraplegia." A gliomatosis spreading up may also produce a form of vulvar paralysis.

4. *Spinal Deformity.*—Under the fourth heading is *scoliosis, or lateral curvature of the spine*. This phenomenon is present in only 50 per cent. of the cases, and where present is almost invariably to the right side in the dorsal part of the cord. It in all respects corresponds to the ordinary form of scoliosis so often met with in young and debilitated females, from 15 to 18 years of age.

With regard to differential diagnosis—The onset of the disease is more gradual and its course more chronic than would be that of a tumour or of hæmorrhage, and it is too painless for a pachymeningitis. In countries where leprosy exists this may sometimes resemble clinically a case of syringo-myelia.

The prognosis is bad. It may be extremely chronic, but is slowly progressive to a fatal termination. Treatment is of no avail. The disease is commoner in males than females.

Having now given a short description of the clinical features of the disease and mentioned its probable pathology, I will briefly run over the notes of the four cases which have come under my notice.

CASE I., I had not myself an opportunity of seeing, but as it is the first case of the kind which was ever recorded in Ireland, I thought it might be of some interest to you to hear the history of it. The case was brought before the Royal Academy of Medicine in Ireland in December, 1892, by Drs. Coleman and O'Carroll, and an account of it was published in the Transactions of the Academy for the following year.

The case was that of a man thirty-six years old, with good personal and family history, who in 1880 got a bad fall and said he felt something give way at the time. He also momentarily lost his sight, and experienced some pain along the intercostal nerves. In 1888 his right hand got swollen and he lost fine feeling in it. He was a clerk at this time, and, as he described it, he had to watch his pen while writing or it would slip from his fingers.

When exhibited at the Academy he presented the following features:—

Right Leg.—Somewhat spastic; knee jerks increased; ankle clonus slightly present.

Left Leg.—Not spastic; slightly increased reflexes.

Sensation was perfect in both legs.

Clonus could be elicited in his fingers, and he experienced great loss of power in his arms and hands. The upper part of his right trapezius muscle was completely atrophied, probably, I should say, from the implication of the spinal part of the spinal accessory nerve by the spinal lesion. Electrical reaction to the faradic current lessened, but no reaction of degeneration. There were definite areas of anæsthesia and analgesia, and athermia (or loss of temperature sense). His muscular sense, telling him the position of his limbs, was also impaired in his right arm. His pupils were normal and his sight good.

CASE II.—This was the case also of a man. He was under the care of Dr. M'Hugh in St. Vincent's Hospital a few years ago, and I think I cannot do better than describe the case in Dr. M'Hugh's own words:—

“The patient, R. B., is a native of the County Mayo, by occupation a farmer, and twenty-five years of age. His family history presents no noteworthy feature, and up to his twentieth year his health seems to have been good, his only illness having been an attack of measles, which was followed by a delicacy of the respiratory organs. Between four and five years ago, however, he met with a serious accident, which consisted in a bad fall from a horse. His foot caught in the stirrup, and he was dragged for a considerable distance along the ground. When picked up by his friends he was unconscious. He quickly recovered, however, from the more immediate effects of his fall, but soon afterwards noticed that his back was getting weak, and that he was not able to lift weights or to carry sacks on his shoulder as well as before. This weakness gradually increased, and about a year after the accident he began to experience pains, sometimes very acute, in his bones and joints. These were particularly noticeable in his hip-joints, and he attributes his difficulty of gait to stiffness of these joints. As time passed these pains disappeared, and the peculiar changes in his fingers (painless whitlows) became noticeable. The patient attributed them to injuries received while at work, but he observed that they showed no tendency to heal, and he therefore consulted a doctor about them. They caused him little or no pain, and he also found at this time that he could bear pain much better than other people.

"The patient's hands exhibit trophic lesions of a symmetrical character, the terminal phalanx of the middle finger, with the soft parts, having been completely lost on the right side, and very nearly so on the left, whilst many of the fingers present scars not unlike those seen in Raynaud's disease. The nails were not partially or completely destroyed, present transverse grooving, and the skin of the palmar surface of the fingers is marked by deep fissures principally at the junction with the palm. Many of the phalanges present remarkable thickening, suggestive at first sight of acromegaly, and this is especially noticeable in the proximal phalanges of the middle finger of both hands. The interossei muscles show also considerable wasting. The mutilation of the digital extremities, combined with the hypertrophy of the phalanges and the wasting of the interosseous muscles, gives to the hands a most peculiar and characteristic appearance.

"The muscular wasting is not confined to the hands, but is also marked in the deltoids and other scapular muscles and in the lower portions of the trapezii, especially on the left side. The muscles, however, respond to faradic stimuli, though not as readily as in health. The vertebral column presents marked lateral curvature in the dorsi-lumbar region, the convexity being directed towards the right, and there is a compensatory curve in the cervical region. On examining the lower extremities the knee jerks are found to be greatly exaggerated, whilst ankle clonus and rectus clonus can be readily evoked on both sides. Muscular rigidity is not demonstrable, and the gait is not very characteristic. The patient has difficulty in walking, but can cover a mile, he says, in half an hour.

"The cutaneous sensibility presents very remarkable alterations, showing typical sensory dissociation. In the hands, as elsewhere, tactile sensation is unimpaired, but when needles are driven through the skin, or when it is blistered with hot wires, no pain is experienced by the patient, who has, in fact, frequently burned himself from having unconsciously touched hot objects. I may here mention that the whitlows which produced the loss of his finger tips were almost altogether painless. This analgesia, though best marked in the upper extremities, has been found to extend over a considerable area of the body, and is accompanied with loss of heat and cold sensations—at all events within certain limits. Owing to the inexact means at our disposal I have had some difficulty in the exact delimitation of the areas of combined analgesia and thermo-anæsthesia. Both are, however, widely and symmetrically distributed, extending from the occipital region downwards to

the knee-joints. All forms of sensibility are present only in the skin of the face and in that below the knees. Touch sensibility is universally present, and there is no hyperæsthesia discoverable anywhere.

“The patient’s vision and speech are unaffected. His eyes have been carefully examined by Mr. Odevaine, who has failed to discover any deviation from the normal in them. There is also a complete absence of ataxic symptoms, of vaso-motor disturbances and of visceral lesions.”

CASE III.—This was the case of a woman who had noticed the disease first in very early life, and who exemplified all the ordinary clinical features of the disease, except the one of “sensory dissociation,” which, in her case, could not be satisfactorily demonstrated.

CASE IV.—The fourth and last case was a boy, C. S., aged seventeen, who was exhibited the other day at the Royal Academy of Medicine by Dr. Coleman. This disease was congenital. He was a typical example of the disease showing the following points:—Nervous and painless whitlows; sensory dissociation; symmetrical arthropathies, especially of elbow joints; spastic gait; muscular atrophy and weakness; scoliosis, with dorsal curve to right side.

In connection with this case it may be interesting to note that it was first diagnosticated in London in its earlier stages as a case of “progressive muscular atrophy,” and certainly the deformities produced in his hands would have led one easily into making this mistake. Later on the boy went to America, and there the case was diagnosticated as a case of amyotrophic lateral sclerosis, which, I believe, is held by Gowers to be only a form of progressive muscular atrophy, while other authorities, such as Charcot and Talar, hold that it is a distinct and separate disease.

In conclusion, for the benefit of those who may be interested in this subject, I will just mention a few works of reference, where all further information about this strange affection may be obtained—

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ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—EDWARD H. BENNETT, M.D., F.R.C.S.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF MEDICINE.

President—JOHN W. MOORE, M.D., President of the Royal College of Physicians of Ireland.

Sectional Secretary—R. TRAVERS SMITH, M.D.

Friday, April 14, 1899.

The PRESIDENT in the Chair.

Diseases of the Suprarenal Capsules.

DR. J. B. COLEMAN made a communication on the subject of diseases of the suprarenal capsules, and exhibited the viscera and microscopic sections of two cases, of which he narrated the clinical history. One case presented the classical symptoms of Addison's disease, and it occurred in a girl aged twenty-six years, the duration of the disease being three years. Both suprarenal capsules were more than double the normal size, and were a mass of fibrocaseous material, containing giant cells and tubercles; sections of the skin showed brownish-yellow pigment in the cells of the rete mucosum; the heart weighed only five ounces; in the duodenum close to the pylorus there were pin-head-sized greyish nodules, due to hyperplasia of lymphoid tissue around the gland tubules. The other case was one of primary sarcoma of the suprarenal bodies, the patient being a man aged twenty-three years, who presented none of the symptoms of Addison's disease. For three months before his death he suffered from epileptiform fits and from weakness of his limbs; on admission to hospital he presented the signs of ataxic paraplegia; after a debauch he rapidly passed from a drowsy condition into collapse and coma; the necropsy showed both adrenals uniformly enlarged to the size of a man's fist, the growths consisting of round-celled sarcoma; there was a secondary growth about the size of a cherry in the wall of the right auricle; no tumours in the brain or cord; the cord showed degeneration in the motor tracts and in the posterior columns. Dr. Coleman suggested that the

epileptiform fits and the degeneration in the spinal cord were the result of a toxæmia, the latter being due to the diseased condition of the adrenals; under the depressing influences of the debauch the terminal symptoms were set up—drowsiness, collapse, and coma.

DR. R. TRAVERS SMITH spoke.

DR. FINNY pointed out that great destruction of the suprarenals could take place without any of the symptoms of Addison's disease supervening. There was also a group of cases which presented all the evidence of suprarenal melasma, while a necropsy showed that the suprarenals were perfectly healthy. He himself had an example of the latter group under his care. The patient was suffering from tubercular disease, but the suprarenals were unaffected. He therefore thought it probable that the disease was due to some affection of the large nerve elements in the neighbourhood rather than to structural changes in the gland itself.

The PRESIDENT said that, as had been shown, there were three groups of cases—namely, disease of the suprarenals and pigmentation, disease without pigmentation, and pigmentation without disease.

DR. COLEMAN, in reply, said he thought Byrom Bramwell's theory the safest, in which he combined the suprarenal inadequacy and the nervous theory.

Cases of Pyloric Obstruction.

DR. PARSONS read a paper on the above subject.

The PRESIDENT, SURGEON CROLY, MR. G. J. JOHNSTON, and DR. LANGFORD SYMES discussed the paper.

Chronic Pharyngitis.

MR. ROBERT WOODS read a paper on chronic pharyngitis and its relation to nasal obstruction, in which he expressed his belief that mouth-breathing was the essential cause of chronic simple inflammations of the throat. He reviewed the chief functions of the nose, and pointed out how in mouth-breathers the disuse of the special apparatus for modifying the air, by warming, moistening, and filtering from dust, must affect the throat injuriously, since the throat was compelled to take on the function of the nose. In support of this contention he quoted an observation he had repeatedly made, that in these cases of chronic pharyngitis, if the velum palati be lifted, the pharynx wall under cover of it will be found normal. In addition to the more familiar forms of nasal obstruction, he drew attention to a common condition of the nose where the passage, though free enough in the daytime, became

stopped at night. This results apparently from the difference in level of the head between the upright and horizontal positions, there being less drainage, and, therefore, greater tendency for the congested soft tissues to encroach on the air-space in the horizontal than in the upright. The paper concluded with a short account of the operative nasal treatment necessary for the cure of the condition.

The Section then adjourned.

SECTION OF SURGERY.

President—R. L. SWAN, President of the Royal College of Surgeons in Ireland.

Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

Friday, April 7, 1899.

The PRESIDENT in the Chair.

Hey's Internal Derangement of the Knee-joint.

DR. KNOTT read a communication on this subject, in which he made emphatic objections to the generally received view that this lesion was a displacement of one of the semilunar fibro-cartilages of the articulation. He described the signs and symptoms of the condition as it had frequently occurred in his own person, and compared them with the original description of Hey, and the subsequent accounts of other recognised authorities on the same subject. Dr. Knott's own view was that a subluxation of the corresponding condyle of the femur took place, the joint then becoming "locked," with the articular surface of the condyle "over-riding" the prominent margin of the inter-articular fibro-cartilage.

MR. LENTAIGNE discussed the communication, and alluded to the apparatus recommended by Mr. Shafter.

MR. T. MYLES thought that the most striking feature of the descriptions in the text-books of this injury was the apparent total ignorance of the ordinary elementary anatomy of the knee-joint. He had seen a considerable number of cases. In two cases he opened the joint expecting to find a loose cartilage, but found a pedunculated cartilage in the knee-joint. One case had a history pointing to displacement of the internal semilunar cartilage, but he found a small pedunculated cartilaginous body, growing from the front of the joint, projecting between the condyle and tibia. On two other

occasions he found the anterior attachments of the internal semilunar cartilage completely torn away. In every case in which he removed a piece of the cartilage the patient always complained of permanent weakness in the joint. Skiagrams of the affection he considered to be most misleading and absolutely futile, and the length of the ligamentum patellæ would be compensated for by the increased contraction of the quadriceps extensor.

MR. R. C. B. MAUNSELL had removed a semilunar cartilage a year ago from a girl's knee. She had complained for several years of recurrent attacks of the dislocation. Recovery was rapid, and patient now perfectly strong.

MR. CROLY said that he had seen some important cases of this condition. One case, a gentleman, came to him with one knee slightly flexed and hopping on the good leg; his knee-joint was "locked." Extension, followed by sudden flexion, gave instant relief, and the patient insisted on walking home. The interesting thing was the slight violence causing the affection, but that applied to all dislocations. The joint was locked in all the cases he had seen. The reason why the external cartilage was not displaced was that the popliteus tendon tied it so tightly in its groove. He thought there was a difference in symptoms of loose cartilage and this affection. The former caused a sickening sensation within the knee itself, whereas the latter caused intense pain over the line of the internal semilunar cartilage. He thought that Mr. Maunsell was very fortunate in the case where he had removed the cartilage, but he did not approve of the proceeding.

DR. KNOTT, in reply, said that he believed the apparatus mentioned by Mr. Lentaigue to be very good for converting the knee into a hinge joint. He agreed with Mr. Myles regarding the misleading character of the skiagrams. It was a remarkable fact that direct cutting of ligamentous structures is attended with comparatively slight pain, whereas stretching a ligament is most painful. Regarding Mr. Maunsell's case, it was beyond his comprehension how a perfectly sound knee was left.

Advancement of the Recti Muscles of the Eyeball.

MR. STORY described the method of advancing the recti muscles in the treatment of strabismus, which he had devised more than three years ago, and had considered to be his own peculiar property till a publication in the "*Annales d'Oculistique*" had informed him that the essential point in his operation had been anticipated, so far as publication is concerned, by Valude. The essential point is splitting the tendon longitudinally, and suturing each half of it

separately to the conjunctiva or sclerotic. Each half is engaged in a loop of suture lying at right angles to the direction of the fibres of the tendon, and the knots are tied over glass beads to prevent the sutures cutting too rapidly through the conjunctiva. The modification of splitting the tendon has also been described by Praun in September, 1898, as a novelty. Valude's description appeared in August, 1896.

MR. BENSON had seen Mr. Story perform the operation and was impressed by the satisfactory results. He himself had employed a modification of Schweigger's operation, and frequently shortened the tendon rather than advance it to the edge of the cornea, and had been well satisfied with the results. In his modification of Schweigger's operation it was necessary, in order to avoid strain on the sutures, to put in an anchor suture. The pulley operation was a most abominably complicated thing to do. He thought it probable that for the majority of cases the operation described by Mr. Story would answer the purpose better than any other single operation.

MR. MAXWELL said that Mr. Story's seemed a good operation. In Mr. Swanzy's operation, the tying of the knot round the tendon and the subsequent burying of that knot was a very grave drawback, as the suture was removed afterwards with great difficulty. However, in Mr. Swanzy's operation the tendon was really split. Shortening operations and advancement operations had practically the same ultimate results. When a tendon is advanced it is not the cut end alone which unites to the eyeball, but the conjunctiva having been raised up from the globe, a raw surface is left below and above, and the tendon becomes adherent to that raw surface at the level of its division to the eye. The great objection, he thought, in almost all operations, is that the tendon is divided, and if any slipping should occur, the patient's condition is worse than formerly. Another objection is that the suture is inserted into the tendon at one side, which is firm enough provided the thread is carried across the tendon, but the other end is inserted into the conjunctiva, which is soft and delicate and easily torn. He described a method of his own to obviate slipping, in which tendon was stitched to tendon and the muscle was not divided at all, and even if slipping should occur, the original condition would remain.

MR. CROLY also remarked on the communication.

MR. STORY, in reply, said he was sure that Mr. Maxwell's was a very good operation. There was not the same chance of one of the sutures giving way in his operation as in many of the other operations, because the only pull in his operation was directly along

the tendon to the conjunctiva. The same pull occurred on the opposite side of that tendon, but in other operations where the tendon was not divided into two, and where there is a pull from one side of the tendon, the lower suture actually pulled on the upper one, and there is a much greater chance for the sutures to cut through. Dr. Valude's reason for introducing the practice of splitting the tendon was because he found it was only those of the older operations were successful in which the tendon split accidentally. He himself had never noticed the tendon split during the operation.

The Section then adjourned.

SECTION OF OBSTETRICS.

President—F. W. KIDD, M.D.

Sectional Secretary—JOHN H. GLENN, M.D.

Friday, April 21, 1899.

The PRESIDENT in the Chair.

Exhibits.

DR. JOHN CAMPBELL (Belfast)—(a) Carcinomatous uterus removed by vaginal hysterectomy; (b) a dermoid cyst of the ovary removed by abdominal section; (c) an ovarian cyst removed by abdominal section.

DR. PUREFOY—A case of pyosalpinx.

DR. GLENN exhibited a pathological specimen of carcinoma of the body of the uterus, with microscopical sections of secondary nodules from the lungs, prepared by Dr. Earl.

Two Years' Work at the Samaritan Hospital for Women, Belfast.

DR. JOHN CAMPBELL read a paper on above.

History.—The Samaritan Hospital for Women, Belfast, was founded in 1872 by the late Dr. W. K. M'Mordie. The present building was erected in 1874, through the munificence of the late Mr. Edward Benn. In 1898 Mr. Forster Green generously added two cancer wards.

Accommodation.—The hospital contains 30 beds, as well as nurses' apartments. Of these, 8 are in the isolation wing and are devoted to the treatment of cancer and septic cases.

Admission of Patients.—All comers are examined without question. Each patient is then handed an appropriate form filled up, and is

requested to submit it to her doctor, in order that he may either himself carry out the treatment suggested, or sign the annexed recommendation and send her back to hospital for treatment. This system works well and throws the responsibility of conniving at hospital abuse on the members of the local medical profession.

Preparation for Operations.—Patients are well scrubbed with soap and water, and wear boric compresses over the seat of operation for three or four days beforehand. The day before operation the field is well washed with soap and water, rubbed with turpentine, again washed with soap and water, and finally washed with 1 in 1,000 sublimate solution, and covered by a compress wrung out of the same. This preparation is repeated on the morning of the operation day. Septic cases are, as far as possible, excluded from the operation room. Sterilisation by boiling is carried out in regard to everything to which it can be applied. The hands are cleansed by thorough washing, followed by washing in turpentine, and again in soap and water. They are then put through the permanganate and sublimate processes in succession. India-rubber gloves are used if a septic case has been recently handled. The gloves are boiled.

Anæsthesia.—Chloroform is given by Junker's inhaler. Sickness in a patient is regarded as indicative of returning consciousness and of incompetence on the part of the anæsthetist. By the sponge and towel methods the patient is alternately half-poisoned and half-conscious.

Flushing the abdomen is done in tubercular peritonitis and cases in which glairy fluid has escaped into the abdomen.

Drainage is used after flushing, in cases where much peritoneal fluid has been present, and in cases in which pus has escaped. The current of opinion has now set in too strongly against drainage. A glass tube with a gauze wick is to be preferred, and the bed-head should be raised. Small gauze drains float on the intestines. Large ones prevent the bowels from resuming their natural position. A rigid tube keeps the gauze in the pelvis.

Dressings.—Sterilised gauze is used for most cases. Iodoform is used for wounds which are drained.

Post-operative Treatment.—Morphia is, if possible, avoided. One half grain hypodermic may be given if pain is severe. The amount of fluid allowed depends on the amount of vomiting present.

During 1897-98 forty-four intraperitoneal operations were performed in the Samaritan Hospital by Dr. John Campbell, namely:—

I. Twenty ovarian tumours, including 16 ordinary cysts, three dermoids, and one solid tumour. The patients' ages varied

from 21 to 65. In three cases both ovaries were removed; in four one ovary was removed and the other resected. In one case a faecal fistula was present for a fortnight, and in one phlebitis occurred in the left leg after puncture of small cysts in the corresponding ovary. All the patients recovered.

- II. Diseases of the tubes were operated on in three cases. In one the tubes were catheterised; in another a four months' foetus was removed from the right broad ligament; and in one a tumour of myomatous appearance was removed from the inner end of a tube, the outer end of which was dilated and contained fluid like menstrual blood.
- III. A fibro-cystic tumour independent of the tube and ovary, and not obviously connected with the uterus, was removed from the right broad ligament. It weighed 20 lbs.
- IV. Fibro-myomata of the uterus were operated on nine times. Four were abdominal operations, done by the intraperitoneal method; two were vaginal hysterectomies; one was amputation of a large subperitoneal fibroid; one was an enucleation after abdominal section; and one was an exploratory incision, in which the appendages could not be got out, and the patient could not stand panhysterectomy. The enucleation case died of shock; the others all recovered.
- V. One case of cancer of the corpus and one of cancer of the cervix uteri were successfully removed by vaginal hysterectomy.
- VI. A case of prolapse and one of retroversion were treated by vagino-fixation, with good result in both cases.
- VII. Tubercular peritonitis was incised and drained twice. The case in which there was much fluid appears to be cured; the other was not benefited.
- VIII. A hydronephrotic kidney and a tubercular kidney containing abscesses were removed with success.
- IX. Gastrostomy for cancer of the œsophagus was done once with excellent result. The vermiform appendix was once removed. A cancerous cæcum was exposed with the view of making a faecal fistula and excising the growth when the patient had recovered from the effects of the intestinal obstruction caused by the growth, but she died exhausted after the preliminary operation.

The mortality of these 44 cases was $4\frac{1}{2}$ per cent., as good an average as can be expected, if operations on so many different abdominal organs are taken together.

The following form is signed by patients needing dangerous operations. On it the operator writes his opinion as to the nature of the disease, as to the amount of danger the operation entails, and as to the possible effect of it on menstruation and pregnancy. The patient and a near relative must sign it :—

“ We, the undersigned, do hereby request Dr. John Campbell to
“ undertake the treatment of
“ and to perform whatever operation he may think necessary.

“ Name,

“ Address,

“ Name,

“ Address,

“ Date,

”

The minor operations require no special mention ; none of them was followed by death.

THE PRESIDENT expressed his approval of the printed forms which patients were asked to sign before undergoing an operation. He thought that gloves should be used in operations only when they suspected that they could not render their hands completely aseptic. He did not agree with Dr. Campbell's opinion that all the dangers of chloroform were due to maladministration. When chloroform was administered guttatim he had seen no ill effects. Dr. Campbell's mortality of 4·5 per cent. was very satisfactory.

DR. SMITH said he had practically given up drainage. He believed that after a few hours no drainage took place, since a layer of protective lymph was thrown out round the tube which acted as a foreign body. Moreover, a solid drainage tube pressing against the rectum was capable of causing a fistula. The operation he preferred was retro-peritoneal hysterectomy, which gave excellent results.

MR. M'ARDLE, referring to pelvic pain remaining after removal of the tubes and ovaries, said that nearly all the abdominal viscera reflected pain to the pelvis after laparotomy. It was not uncommon in gouty affections of the kidneys to have the pain referred to the pelvic region, and in many instances of spinal lesions the chief pains were pelvic. He strongly advocated the intraperitoneal method of operating, and considered drainage of the peritoneal cavity unnecessary, except where there was some intestinal lesion or some infection of the peritoneal cavity. He did not believe there was any need of the printed form to be signed by patients about to undergo operation.

DR. MACAN agreed with Surgeon M'Ardle's last remark about the printed form which Dr. Campbell had shown them.

DR. PUREFOY said he was one of those who practised drainage, but he had never used a rigid tube. The gauze drain, in the form of a Mikulicz' bag, or otherwise, he was satisfied was of the utmost use.

DR. CAMPBELL, replying, said he believed that sudden death during the administration of chloroform was generally due to the use of a too concentrated solution. With regard to drainage, it was quite true that it was useless after a few hours, but it was during those few hours that it was especially required. He considered the vaginal method of operating on fibroids the best, when it could be done. The printed form he had shown them was designed to show the patient that operation was indeed the lesser evil.

On Uterine Cancer and its Treatment.

DR. MORE MADDEN read a paper on this subject. [It was published in the number of this Journal for June, 1899, Vol. CVII., page 401.]

THE PRESIDENT said there were many conditions which resembled the initial stage of uterine carcinoma. A microscopic examination was, therefore, always desirable. He had performed vaginal hysterectomy on 7 patients for malignant disease. Four of them, at least, he knew to be still alive.

SURGEON M'ARDLE said with reference to removal of the glands with the uterus and appendages, he had never yet seen thorough removal of the retro-peritoneal glands. In operations for tubercular disease of the vermiform appendix it was his custom to rip up the peritoneum and remove the glands involved.

DR. ALFRED SMITH said sufficient stress was not laid upon rectal examination for the purpose of determining infiltration of the surrounding tissues. He thought that the best chance for the patient was offered by the abdominal method of operating, if there was any doubt about the case.

DR. PUREFOY said that when he recognised malignant disease in the uterus his inclination was to remove the whole organ.

DR. MORE MADDEN replied.

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D. Univ. Dubl.;

P.R.C.P.I.; F. R. Met. Soc.;

Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four Weeks ending Saturday, August 12, 1899.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	July 22	July 29	Aug. 5	Aug. 12			July 22	July 29	Aug. 5	Aug. 12	
23 Town Districts	20·8	22·0	21·7	21·9	23·0	Limerick -	11·2	16·8	26·7	14·0	17·2
Armagh -	7·1	28·5	21·4	42·8	24·9	Lisburn -	0·0	12·8	8·5	17·0	9·6
Ballymena	16·9	16·9	22·5	11·3	16·9	Londonderry	9·4	22·0	17·3	14·1	15·7
Belfast -	22·2	20·6	23·2	24·6	22·6	Lurgan -	18·2	4·6	22·8	22·8	17·1
Carrickfergus	23·4	23·4	0·0	17·5	16·1	Newry -	28·2	8·1	12·1	12·1	15·1
Clonmel -	9·7	9·7	14·6	19·5	13·4	Newtownards	22·7	11·3	17·0	11·3	15·6
Cork -	20·1	21·5	24·9	23·5	22·5	Portadown -	12·4	24·7	18·6	0·0	13·9
Drogheda -	38·0 ^a	11·4	22·8	19·0	22·8	Queenstown	17·2	17·2	5·7	28·7	17·2
Dublin (Reg. Area)	21·5	26·7	32·2	31·5	28·0	Sligo -	10·2	40·6	0·0	10·2	15·3
Dundalk -	25·1	12·6	8·4	16·8	15·7	Tralee -	16·8	16·8	11·2	28·0	18·2
Galway -	7·6	26·4	11·3	18·9	16·1	Waterford -	23·9	13·9	27·9	19·9	21·4
Kilkenny -	18·9	37·8	9·4	33·0	24·8	Wexford -	27·1	18·1	18·1	9·0	18·1

In the week ending Saturday, August 12, 1899, the mortality in thirty-three large English towns, including London (in which the rate was 23·7), was equal to an average annual death-rate of 24·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17·9 per 1,000. In Glasgow the rate was 19·7. In Edinburgh it was 18·1.

^a Owing to alterations in boundaries, registration was suspended in one of the Drogheda districts during the weeks ended 8th and 15th July respectively.

The average annual death-rate represented by the deaths registered during the same week in the Dublin Registration Area and in the twenty-two principal provincial Urban Districts of Ireland was 24·9 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,053,188.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 5·3 per 1,000, the rates varying from 0·0 in fourteen of the districts to 14·3 in Armagh—the 6 deaths from all causes in that district comprising 2 from diarrhoea. Among the 165 deaths from all causes registered in Belfast are 3 from measles, 5 from whooping-cough, 1 from diphtheria, 1 from simple continued fever, 6 from enteric fever, and 15 from diarrhoea. The 34 deaths in Cork comprise 2 from measles and 3 from diarrhoea. Two of the 24 deaths in Londonderry were caused by diarrhoea, as were also 2 of the 10 deaths in Waterford and both of the 2 deaths registered in Ballymena.

In the Dublin Registration Area the births registered during the week amounted to 205—87 boys and 118 girls; and the deaths to 214—114 males and 100 females.

The deaths, which are 59 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 31·9 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the area, the rate was 31·5 per 1,000. During the thirty-two weeks ending with Saturday, August 12, the death-rate averaged 27·9, and was 0·1 over the mean rate for the corresponding portions of the ten years 1889–1898.

The number of deaths from zymotic diseases registered during the week was 70, being 1 under the number for the preceding week, but 37 in excess of the average for the 32nd week of the last 10 years. The 70 deaths comprise 9 from measles, 1 from typhus, 3 from whooping-cough, 2 from diphtheria, 4 from enteric fever, 6 from simple cholera and choleraic diarrhoea, 43 from diarrhoea (being 24 in excess of the average number of deaths from that cause in the corresponding week of the last ten years, and 4 over the number for the previous week), and 1 from erysipelas. Sixty of the 70 deaths from zymotic diseases—including all of those from measles and whooping-cough, and 46 of the deaths from diarrhoeal diseases—occurred among children under 5 years of age, those from diarrhoeal diseases comprising 34 of infants under 1 year old.

The cases of measles admitted to hospital during the week were 44, being 14 over the admissions in the preceding week, but 31 under the admissions in the week ended July 29. Fifty-three

measles patients were discharged, 5 died, and 120 remained under treatment on Saturday, August 12, being 14 under the number in hospital at the close of the preceding week.

Eleven cases of scarlatina were admitted to hospital against 10 admissions in each of the two weeks preceding: 12 patients were discharged, and 49 remained under treatment on Saturday, being 1 under the number in hospital on Saturday, August 5. This number is exclusive of 24 convalescents under treatment at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

The weekly number of cases of enteric fever admitted to hospital, which, after having fallen from 11 in the week ended July 22, to 6 in the following week, rose to 12 in the week ended August 5, further rose to 29. Eleven patients were discharged, 1 died, and 70 remained under treatment on Saturday, being 17 over the number in hospital at the close of the preceding week.

The hospital admissions for the week included, also, 3 cases of diphtheria: 8 cases of this disease remained under treatment in hospital on Saturday.

Nineteen deaths from diseases of the respiratory system were registered, being 5 over the average for the corresponding week of the last ten years, and 1 over the number for the preceding week. They consist of 12 from bronchitis and 7 from pneumonia.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of July, 1899.

Mean Height of Barometer, -	-	-	30·086 inches.
Maximal Height of Barometer (on 31st, at 9 a.m.),	30·471	„	
Minimal Height of Barometer (on 1st, at 9 a.m.),	29·439	„	
Mean Dry-bulb Temperature, -	-	-	61·1°.
Mean Wet-bulb Temperature, -	-	-	58·1°.
Mean Dew-point Temperature, -	-	-	55·5°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·440	inch.	
Mean Humidity, -	-	-	82·6 per cent.
Highest Temperature in Shade (on 5th),	-	-	74·9°.
Lowest Temperature in Shade (on 15th),	-	-	49·1°.
Lowest Temperature on Grass (Radiation) (on 18th),	-	-	44·2°.
Mean Amount of Cloud, -	-	-	72·0 per cent.
Rainfall (on 12 days), -	-	-	3·121 inches.
Greatest Daily Rainfall (on 11th),	-	-	1·402 inches.
General Directions of Wind, -	-	-	N.W., W., W.S.W.

Remarks.

A warm but changeable month, with very clouded skies (72 per cent. of cloud), and occasional heavy rains. Both atmospheric pressure and temperature ruled high. Winds from westerly points (from N.W. through W. to S.W.) largely predominated. Periods of excessive heat were felt in the S. and S.E. of England, and coincidentally torrential rains occurred in Ireland and Wales; on the 11th 1·402 inches fell in Dublin; on the 20th and 21st 3·36 inches fell at Holyhead. A remarkable feature was the occurrence of afternoon "evaporation" showers, with a high and steady barometer, from the 15th to the 18th inclusive. In one such shower on the 17th the measurement at Fassaroe, near Bray, was 1·280 inches. In London, on the night of the 22nd, thunder rains occurred, varying from only ·15 inch to 1·70 inches.

In Dublin the arithmetical mean temperature ($62\cdot2^{\circ}$) was above the average ($60\cdot6^{\circ}$); the mean dry-bulb readings at 9 a.m. and 9 p.m. were $61\cdot1^{\circ}$. In the thirty-four years ending with 1898, July was coldest in 1879 ("the cold year") (M. T. = $57\cdot2^{\circ}$). It was warmest in 1887 (M. T. = $63\cdot7^{\circ}$), and in 1868 ("the warm year") (M. T. = $63\cdot5^{\circ}$). In 1898 the M. T. was $60\cdot6^{\circ}$.

The mean height of the barometer was 30·086 inches, or 0·171 inch above the corrected average value for July—namely, 29·915 inches. The mercury marked 30·471 inches at 9 a.m. of the 31st, and fell to 29·439 inches at 9 a.m. of the 1st. The observed range of atmospheric pressure was, therefore, 1·032 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was $61\cdot1^{\circ}$, or $0\cdot6^{\circ}$ above the value for June, 1899. Using the formula, *Mean Temp.* = *Min.* + (*max.*—*min.* \times ·465), the value was $61\cdot8^{\circ}$, or $1\cdot6^{\circ}$ above the average mean temperature for July, calculated in the same way, in the twenty-five years, 1865–89, inclusive ($60\cdot2^{\circ}$). The arithmetical mean of the maximal and minimal readings was $62\cdot2^{\circ}$, compared with a twenty-five years' average of $60\cdot6^{\circ}$. On the 5th the thermometer in the screen rose to $74\cdot9^{\circ}$ —wind, W.S.W.; on the 13th the temperature fell to $49\cdot1^{\circ}$ —wind, S.W. The minimum on the grass was $44\cdot2^{\circ}$ on the 13th.

The rainfall was 3·121 inches distributed over 12 days. The average rainfall for July in the twenty-five years, 1865–89, inclusive, was 2·420 inches, and the average number of rainy days was 17·2. The rainfall, therefore, was above, whereas the rainy days were much below the average. In 1880 the rainfall in July was very large—6·087 inches on 24 days; in 1896, also, 5·474

inches fell on 18 days. On the other hand, in 1870 only .539 inch was measured on 8 days; in 1869, the fall was only .739 inch on 9 days; and in 1868 .741 inch fell on but 5 days. In 1898, .945 inch fell on only 8 days.

High winds were noted on 5 days, but attained the force of a moderate gale on only one occasion—the 26th. Temperature reached or exceeded 70° in the screen on 11 days. In July, 1887, temperature reached or exceeded 70° in the screen on no fewer than 17 days. In 1888, the maximum for July was only 68.7°.

There was a thunderstorm on the 6th. Thunder occurred on the 17th. A solar halo was seen on the 8th. The atmosphere was rather foggy on the 19th, 20th, 21st, 22nd and 31st.

The rainfall in Dublin during the seven months ending July 31st amounted to 14.416 inches on 107 days, compared with 13.060 inches on 106 days in 1898, 15.600 inches on 125 days in 1897, 13.328 inches on 102 days in 1896, 16.785 inches on 96 days in 1895, 18.133 inches on 130 days in 1894, 7.935 inches on 80 days in 1887, and a twenty-five years' average of 14.733 inches on 112.6 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in July was 3.480 inches on 14 days, compared with 1.145 inches on 6 days in 1898, 1.625 inches on 10 days in 1897, 5.726 inches on 16 days in 1896, 3.680 inches on 16 days in 1895, 3.805 inches on 19 days in 1894, and 1.290 inches on 15 days in 1893. Of the total rainfall 1.150 inches fell on the 11th, and .725 inch on the 20th. The total fall since January 1 has been 22.990 inches on 109 days, compared with 14.645 inches on 94 days in 1898, 19.750 inches on 116 days in 1897, 13.082 inches on 77 days in 1896, 17.950 inches on 83 days in 1895, 21.186 inches on 115 days in 1894, and 13.066 inches on 90 days in 1893.

At Cloneevin, Killiney, Co. Dublin, the rainfall in July was 3.48 inches on 17 days, compared with a fourteen years' average of 2.340 inches on 15.2 days. On the 11th the rainfall was 1.25 inches. In July, 1898, .840 inch fell on 7 days; in 1897, 1.28 inches fell on 10 days; in 1896, 6.72 inches on 20 days; in 1895, 3.58 inches on 17 days; in 1894, 4.08 inches on 23 days; in 1885, only .70 inch on 9 days. Since January 1, 1899, 17.10 inches of rain have fallen on 106 days at this station.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall was 3.232 inches on 13 days, compared with 1.380 inches on 6 days in July, 1898, and 1.425 inches on 11 days in July, 1897, 1.068 inches being measured on the 11th, and .940 inch on the 20th. At this Second Order Station 21.871 inches

f rain have fallen on 104 days since January 1, 1899. The maximal temperature in the shade in July was 75.0° on the 29th, the minimum was 46.2° on the 13th.

CHOREA.

FORNACA (*Journal of the American Medical Association*) reports seven cases of chorea all rapidly cured with the oil of wintergreen (methyl salicylate). It equals in efficiency, and can be used instead of sodium salicylate. No more agreeable or effective mode of administration could be suggested than that afforded by the globules of colchicine with methyl salicylate, prepared by Parke, Davis & Co., each containing 1-250th grain of the alkaloid and three minims of methyl salicylate.

STARCH DIGESTION IN THE STOMACH.

It has been usually supposed that the diastasic digestion of starchy food in the stomach is interfered with by the hydrochloric acid of gastric juice within a short time after each meal. Professor A. E. Austin, A.M., M.D., Boston, Massachusetts, has undertaken (*Boston Medical and Surgical Journal*, Vol. 140, No. 14) to make a systematic research into this important physiological function. For the purpose of studying the relative functions of starch and diastase, taka-dia-
stase (Parke, Davis & Co.) was used, for its amylolytic power is remarkably strong as well as stable. From the results of the experiments the following facts seem to be well established:—Taka-dia-
stase digests starch with remarkable rapidity in a neutral or slightly acid medium, in which it is capable of digesting 300 times its own weight of starch in one hour. The digestion of starch by taka-dia-
stase is accelerated by the presence of a small quantity of free HCl. The digestion of starch by taka-dia-
stase is not interfered with by organic acid; on the contrary, the presence of a small quantity of organic acid favours the diastasic digestion of starch. Albuminous foods combine with or neutralise HCl of gastric juice. The combined acid has no inhibitory action on diastasic digestion by starch. In the human stomach the albuminous matter of the food combines with the HCl of the gastric juice as fast as it is formed, and such combined HCl has no hindering action on starch digestion. The diastasic digestion of starchy food is practically completed within one hour.

PERISCOPE.

LAS VEGAS HOT SPRINGS, NEW MEXICO, U.S.A.

LAS VEGAS HOT SPRINGS, New Mexico, U.S.A., are situated among the foothills of the Rocky Mountains in what is known as the "dry belt," and are easily reached by the Santa Fe Route from any portion of the country. These springs are a health resort, and are especially suitable for those who desire a change of environment, or for those who seek a climate which has an excess of sunshine, a dry atmosphere, and a medium altitude, with no extremes of heat or cold. Las Vegas Hot Springs are situated in lat. $35^{\circ} 30' N.$, long. $105^{\circ} 12' W.$, at an altitude of 6,767 feet, the mean atmospheric pressure being 23.5 inches. The following climatological information is derived from the Report of the Government Weather Bureau Station at Las Vegas, the observer being Dr. William Curtiss Bailey, A.M., M.D., Medical Director of the springs:—*Relative Humidity*—Mean relative humidity for the year, 40.82 per cent.; lowest for any one month—May, 21.55; highest for any one month—Aug., 73.45; lowest recorded humidity entire year, at 8 a.m., May 4th, 3.0; number of days humidity recorded 20 or less, 90; number of days humidity recorded 10 or less, 30. *Precipitation*—Total precipitation, including melted snow, for the entire year, 15.87 in.; of this the amount that fell in June and July, the rainy season, was 9.0 in.; precipitation in January, 0.0 in.; number of days during the year in which 0.01 in. or more precipitation fell, 63; number of days in which 1 in. fell, 0; amount of snowfall, unmelted, for entire year, 28.35 in. *Temperature*—Mean temperature for the year, 49.11° ; mean temperature, May to October, inclusive, 61.31° ; mean temperature, November to April, inclusive, 35.09° ; mean temperature for three summer months, 66.64° ; mean temperature for three winter months, 29.99° ; mean average night temperature for summer months, indicating lowest at night, 52.25° ; number of days temperature reached above 90° during entire year, 8 (all these occurred in June and July, 1898); at no time did the thermometer reach 100° ; five times during the year the thermometer fell below zero (each of these occurred during the night). *Character of Sky*—What is called a "clear day" is when the sky is three-tenths or less overcast; a "partly cloudy" day is indicated when the sky is four-tenths to seven-tenths overcast; a "cloudy day" is indicated when the sky is more

than seven-tenths overcast; number of clear days during entire year, 261; number of partly cloudy days, 83; number of cloudy days, 21; the actual number of days in which the sun did not shine, 4; average number of days, per month, of continuous sunshine during last nine months of fiscal year, 25. *Prevailing Winds*—Prevailing winds for entire year were from the southwest, or from a portion of the country which is dryest, and partly desert.

EGG ALBUMEN IN ILLNESS.

“SISTER ELIZABETH” contributes to *The Hospital*, August 5, 1899, an instructive article on the free use of raw white of egg in the diets of youngish women suffering from anæmia, gastric ulcer, and dyspeptic troubles of a more or less severe character. The usual proportion is two whites of eggs to one pint of cold water, but if a more concentrated form of nourishment is desired double that number may be used without inconvenience. Beat the whites of the eggs well first, then stir them thoroughly into the water, and strain the mixture through a fine sieve before administration. The mixture is tasteless, and if given alone may be flavoured with vanilla, cinnamon, &c., but when given in milk and whey it is better unflavoured. From personal observation of the administration of egg-water to patients suffering from dyspepsia, gastritis, and gastric ulcer, Sister E. has learnt that the results have been a quicker cessation of pain and uneasiness after food, and a steadier march towards convalescence than in those cases where it was not given. After a course of nutrient enemata a teaspoonful or two of albuminous water—i.e., egg-water—every hour is a safe and nutritious way of beginning mouth feeding again. In three cases who were having large enemata of ten ounces of peptonised milk every six hours, the addition of the raw white of an egg was made with good results; there was an entire absence of diarrhoea and discomfort—a great gain, as all these cases were fed only by enemata for ten days or a fortnight. In a fourth case the addition of white of egg made no special difference, and the enemata were only moderately retained, but it should be added that the patient was taking two teaspoonfuls of Carlsbad salts every morning, so a looseness of the bowels was to be expected. In cases of obstinate vomiting egg-water is very useful, and will often be retained when nothing else is. Combined with whey, in bad cases of enteric fever where milk is not tolerated and is speedily vomited in a curdled, undigested condition, it forms a good food for some days, till milk can be resumed. Taken in its concentrated form (four whites of eggs to the pint) it proved of the greatest service

to a young woman suffering from a severe attack of enteric fever in the above-mentioned ward, all sickness stopping after its administration, and the strength being well maintained. Children with diarrhoea and vomiting have benefited by taking it alone and in conjunction with whey, when it has been advisable to stop milk for a time. Stimulants may very well be diluted with albumen-water instead of plain water in cases where it is desirable to increase the nutrition. Egg-water should not be added to boiling, or even to very hot liquids, as the rapid coagulation of the albumen under heat will at once render it indigestible, and negative the hoped-for good results. It is well known in France as "*Eau albumineuse*," and one is inclined to surmise it to be a "good remedy out of fashion," though none the less valuable on that account. The experiences of others who may have used egg-water as an article of diet for the sick would be of great interest to the nursing world, and especially to the writer.

SOME POINTS OF SPECIAL INTEREST IN THE STUDY OF THE DEEP
REFLEXES OF THE LOWER EXTREMITIES.

PROFESSOR C. K. MILLS records an interesting case of valvular disease of the heart, in which there was partial paraplegia, analgesia on the right side in the region supplied by the anterior crural, external saphenous, and musculo-cutaneous nerves. The knee-jerks were lost on both sides, but ankle clonus was present on the left side. After death no changes in the brain or cord were found, but some degeneration in the anterior crural nerve and in the muscles of the lower extremities. From a careful study of the cases in which ankle clonus persisted with loss of knee-jerk, the author arrives at the following conclusions as to the conditions which may induce their syndrome:—1. It may be due to compression or destroying lesion, such as caries with pachymeningitis, or transverse myelitis, involving the cord in the region of the patellar reflex arc—namely, somewhere between the second and fifth lumbar segments, and most probably about the second or third lumbar segments. 2. It may be due to disseminated sclerosis, foci of sclerosis being present, both in the reflex arc for the patella and in the lateral column. 3. It may be due to focal lesions, like hæmorrhage, softening, or cavity formation, attacking points in the reflex arc and also the lateral columns. 4. It may be due to peculiar forms of developmental arrest of the spinal cord—as, for instance, the defect in the grey matter of the lumbar segments and in the lateral columns. 5. It may be due to a combination of muscular and neural disease, as in the author's case, and as was

probably also the case in the man suffering from typhoid fever, as recorded by Fleury. It is known that hyaline degeneration of muscular fibres occurs especially in typhoid fever. Fleury's case was probably, in its pathology, not unlike that here recorded. 6. On theoretical grounds it seems probable that the syndrome might be due to a focal lesion in the cerebral cortex, or in the cortical spinal (pyramidal) tract, or to arrested development of the tract, associated with disease (inflammation or degeneration), limited to the crural nerves and their muscles.—*Journal of Mental and Nervous Diseases*, March, 1899.

TREATMENT OF NOCTURNAL INCONTINENCE OF URINE.

LESLIE PHILLIPS, M.D. (*Brit. Med. Jour.*, May 27, p. 1,274). Antipyrin soon gives good results often in contrast to belladonna, pichi, and rhus aromatica. The writer gives one nightly dose of 8 or 10 grains to a boy of seven, and gradually increases it. He has continued this for four months without toxic symptoms. As the habit appears to be broken or modified a course of arsenic may be added, pushing it if well borne.—*Med. and Surg. "Review of Reviews."*

GONORRHOEA.

DR. ORVILLE HORWITZ highly recommends the following formula, which Messrs. Parke, Davis & Co. have added to their list as soluble elastic capsule No. 162, methylene blue compound (Dr. Orville Horwitz):—Methylene blue, 1 grain; pure santal oil, 1½ minims; copaiba, 1½ minims; oil of cinnamon, ½ minim. Dose: Two capsules three times daily.

PRECAUTIONS AGAINST SUMMER DIARRHOEA.

THE following excellent leaflet, drawn up by Dr. Niven, Medical Officer of Health, is extensively circulated in Manchester by the Sanitary Authorities:—1. Infants fed by hand suffer in a far greater degree from diarrhoea than infants fed at the breast. This is chiefly due to errors in feeding. 2. All milk should be boiled before use, either separately or after addition to other food. The sooner ordinary milk is boiled after milking the better, provided it is afterwards kept strictly clean in a clean dish. 3. Children's food should be freshly prepared. When it is necessary to keep milk in the warm season it should be boiled and stood in a clean jug or dish, covered over with a clean cloth. 4. Infants are very apt to suck their clothing, which should therefore be kept scrupulously clean; care should be exercised to prevent any dirty material getting into their mouths. 5. All food should be kept in a clean, dry, and well-

aired place. 6. Meat and fish should be carefully examined on purchase, and no tainted food should be bought. Food which has become tainted after cooking should be rejected. Fruit should be carefully selected and cleaned. 7. Overcrowding is a cause of diarrhoea. During the warm season bedroom windows should be left open day and night, and the fireplace should be kept open. Bedroom walls and ceilings should be lime-washed early in summer. If the room is papered, the paper should be cleaned. Overcrowding should be avoided. 8. All dirt should be removed from the house. The floors should be frequently scrubbed with soap and soda. Dirty paper should be removed. If the walls under the paper are dirty or broken, the paper should be removed and the walls made good and cleansed. 9. Damp foundations or dirt under a house are conducive to diarrhoea. 10. Any accumulation of an offensive character near a house, whether arising from loose flags, from defective drainage, from collections of manure improperly kept, or from defective cleansing of privies, should be reported to the Sanitary Office or to the Medical Officer of Health at the Town Hall. Other deposits near a house will require to be removed at once by the householder. 11. The yards should be kept clean, and the drains flushed with a few buckets of water daily. 12. The ashtubs should not be allowed to overflow, nor should vegetable refuse be put into them. Tea leaves, cabbage leaves, fish, potato peelings, &c., should be burned in the kitchen fire. No liquid should ever be placed in the ashtub. 13. Where any offensive smell is perceived in or near a house, the cause of which cannot be ascertained and removed, complaint should be made to the Sanitary Office, Town Hall. 14. Diarrhoea mixture may be obtained, free of charge, by poor people, at the several police and fire stations of Manchester, between the hours of 9 p.m. and 9 a.m.

THE INTERNATIONAL TUBERCULOSIS CONGRESS.

THE International Tuberculosis Congress was held in Berlin from May 24th to May 27th. It was opened by the Empress Augusta Victoria, under whose patronage the congress was assembled. There were 2,000 members present. Count Posadoinsky Wehner, Minister of the Imperial Treasury, opened the session with an address of welcome to the delegates, in which he declared that this gathering and the peace conference at The Hague would be the most glorious events in the history of the present time. Emperor William, in answer to a message of respect, sent a telegram expressing his good wishes. Surgeon J. C. Boyd, who represented the Medical Corps of the United States Navy, was

made chairman of the United States delegates, and Dr. von Schweinitz, the American delegate, was chosen honorary president of the second section of the congress. It was stated that medical science has already gained sufficient skill in combating tuberculosis to effect cures in 20 per cent. of the cases. Professor Virchow made an important address on the cause of infection. Professor Brieger, in a lecture on Dr. Koch's tuberculin, stated that it undoubtedly has a strong healing power if the treatment is persisted in, even in cases which have advanced to secondary infection. In any event, by its means tuberculosis can be recognised in good time and in doubtful cases. The chief benefit of the congress will consist in the renewed public interest aroused in the subject of tuberculosis.—*Medical News*, June 3, 1899.

TINNITUS AURICULÆ.

DR. MENDEL, in the *Journal des Praticiens*, says that in patients for whom fifteen to twenty drops of fluid extract of *cimicifuga racemosa* had been prescribed for tinnitus aurium there was benefit in a fair proportion of the cases. When effective, it is rapid in its action, arresting the tinnitus for the time being for at least two or three days. In the treatment of headache arising from eye strain, *cimicifuga racemosa* is said to be very useful.

THE SMELL OF THE EARTH.

NUTTALL has determined that the smell of freshly turned earth is due to the growth of a bacterium, the *Cladothrix odorifera*, which multiplies in decomposing vegetable matter, and more rapidly in the presence of heat and moisture. Hence the odour is especially marked after a shower, or when moist earth is disturbed. In dry soil the development of the bacterium is arrested, but it is immediately resumed with vigour, as soon as moisture is restored.—*Medical News*, June 3, 1899.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Sanitary Feeding Bottles.

MESSRS. KENNEDY & COMPANY, 159 Kingsland-road, London, have devised an important improvement in the fittings of a feeding bottle. The use of a rubber tube is dispensed with, and the improved fittings can be taken to pieces and thoroughly cleansed. It is obvious that, by adopting such improved fittings, the risk of the occurrence of summer diarrhoea is lessened in the case of infants who are bottle-fed. Samples of the new fittings may be obtained free on application of a member of the Medical Profession.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XII.—*Dislocations and Fractures of the Astragalus.*^a

By HENRY GRAY CROLY, F.R.C.S.I.; Ex-President, Royal College of Surgeons; Senior Surgeon, City of Dublin Hospital.

IN the list of surgical accidents none are more serious in character and consequences than the cases I have now the honour of bringing under the notice of the Surgical Section of the Royal Academy of Medicine in Ireland. In 1891, when I occupied the chair as President of the College, I read a paper on Compound Luxations of the Ankle-joint, illustrated by cases, with special reference to the preservative surgery of the foot, and in that communication I ventured to introduce the subject with a few practical remarks on the surgical anatomy of the joint. I see no reason to deviate from that course in this communication.

The astragalus, also called *os balistæ* and *talus*, is situated between the tibia and *os calcis* and navicular bone in front, in size ranks second among the tarsal bones, and is divided into three parts—body, neck, and head. Five surfaces are observed on the body. The superior surface, of an oblong, quadrilateral shape, forms an articular trochlea, convex from before backwards and slightly concave transversely (the reverse to the form of the end of the tibia); it articulates with the inferior

^a Read before the Section of Surgery of the Royal Academy of Medicine in Ireland, on Friday, January 20, 1899.

extremity of the tibia, measures $1\frac{1}{2}$ inches antero-posteriorly and about $1\frac{1}{4}$ transversely—the latter measurement is greater in front than behind—a beautiful provision against luxations backwards of the foot. The posterior surface is occupied by a well-marked groove which passes obliquely downwards and inwards, and lodges the tendon of the flexor pollicis longus, which acts as a ligament, and prevents luxation backwards of the astragalus. The external surface is occupied by a triangular facet which articulates with the fibula. The internal surface is articular, for adaptation of the inner malleolus. The inferior, or under surface, is occupied by a concave articular facet, oval, with its long axis directed from within outwards and forwards. This facet articulates with a corresponding one on the os calcis; immediately in front of it there is a deep and narrow depression, trumpet-shaped, which separates it from an oval planiform facet for articulation with the sustentaculum of the os calcis. The head is smooth and oval, and is adapted to the concavity of the navicular bone. The aspect of the head is forwards, inwards, and slightly downwards. On the inferior part of the head there is another facet, planiform and continuous with the surface described. By means of this facet the astragalus moves on the upper and anterior part of the os calcis. The neck is rough and perforated by blood vessels.

The astragalus is firmly secured in position by ligaments. The mortise cavity formed by the lower end of the tibia is completed by the fibula. The powerful ligamentous connection between the tibia and fibula makes the mortise very strong. The tibia and fibula form together a cavity which receives the pulley-like surface of the astragalus, and thus presents one of the purest hinge-joints in the body. The external malleolus projecting lower and more posteriorly than the internal, gives considerable strength by “wedging” the astragalus.

In flexion of the foot the astragalus rolls from before backwards in the tibio-tarsal mortise, the anterior tibio-tarsal and fibulo-tarsal ligaments are relaxed, the posterior and middle fibulo-tarsal are rendered tense, the internal tibio-tarsal ligament has its posterior fibres stretched, and its anterior ones loosened.

During extension the astragalus rotates forwards in the tibio-fibular mortise, the posterior ligaments are relaxed and the anterior are put upon the stretch. In the upright position the fibula plays no part in the function performed by the joint. The tibia alone receives the weight of the body, and transmits it to the astragalus. The astragalus has been compared to the key-stone of an arch, the arch being represented by the foot. The true design of the vaulted form of the foot, however, is to permit its accommodating itself to the several irregularities of surface, which both in standing and progression it must encounter. Notwithstanding the perfect construction of the ankle-joint and its powerful ligaments, violent accidents set all these precautions at defiance, and produce the most painful and formidable displacements.

The greatest extent of the superficies of the astragalus is covered with smooth cartilage, by which it is rendered much more movable than any other tarsal bone, and therefore more liable to dislocation.

The momentum of the body impinging with great force upon the astragalus, as in jumping from a height, or through a severe fall, the direction in which the astragalus is sent off the os calcis depends on the position of the foot at the time the astragalus receives the whole momentum of the body. The position of the foot also determines the direction in which the force acts upon the astragalus. If the foot be extended the dislocation will be forwards; if extended and twisted outwards it will be forwards and inwards; if extended and inwards it will be outwards; if twisted outwards it will be inwards; if bent (flexed) it will be backwards; and if bent and twisted outwards it will be backwards and inwards. A thorough knowledge of practical anatomy, to be learned only in the dissecting-room, and combined with a good hospital experience, will enable the practitioner to diagnosticate, even when swelling has set in, these most serious cases. The excuse, always ready by those ignorant of anatomy and surgery—viz., “I cannot diagnosticate until the swelling or inflammation subsides”—brings discredit every day, and is the cause of unnecessarily prolonged suffering, even to the risk of limb or life itself.

Although severe falls or wrenches of the foot have caused the greater number of the recorded cases, occasionally, as in Mr. K.'s case, communicated by me in this paper, the simple slipping off the edge of the footpath (a few inches in height), and turning the foot inwards, caused a complete luxation forwards and outwards of the astragalus, with rotation of the superior articular surface.

Dislocations of the astragalus may be complete or incomplete, simple or compound, the bone being displaced forwards and outwards, forwards and inwards, directly forwards or directly backwards. There may be rotation, partial or complete, on its antero-posterior axis; the bone may be thrown transversely or upside down. A large number of such luxations are compound.

Turner, of Manchester, tabulated a very able and exhaustive history of cases of astragalus dislocations, collected from published works.

Sir Astley Cooper, Dupuytren, Fergusson, Williams, Tufnell (Dublin), Broca, Boyer, Malgaigne, Lister, Lizars, Guthrie, Desault, Nélaton, Hancock, Hutton (Dublin), Hey and Smith (of Leeds), Abraham Colles, Cline, Syme, John M'Donnell, Letenneur, Phillips, Cron, Campbell de Morgan, Lee, Lonsdale, Pollock, and many others, contributed cases of these luxations.

Fergusson says—"Dislocation of the astragalus in any direction, and under any circumstances, must be looked upon as a very serious injury; for, although many instances have been seen where life and limb have been preserved, even under great disadvantages, it must be admitted that such satisfactory results have not always followed the praiseworthy attempts of the surgeon to avoid amputation."

The first case of dislocation of the astragalus which came under my notice occurred when I was Purser-student, residing in the City of Dublin Hospital.

CASE I.—A middle-aged man was working on a scaffold at the building of a house in Lower Baggot-street. He fell from a considerable height and landed on his left foot on a brick, turning his foot inwards. He was conveyed to the hospital at once, and Mr. Williams, one of the surgeons and ex-President of this College, who was on accident duty, was promptly in

PLATE I.

**M. R.'s foot at the time of the accident. From original drawing by
Miss Croly.**

attendance ; Mr. Tufnell also came. On examination the foot was inverted, resembling talipes varus, and the head of the astragalus formed a projection on the anterior and outer aspect of the foot. A clove hitch was placed on the foot, the leg was flexed on the thigh and the thigh on the pelvis ; extension was made, and Mr. Williams grasped the heel in his fingers and made steady pressure with his thumbs on the head of the astragalus and the bone returned quickly to its normal position. The patient made a good recovery and had a very useful foot. That case made an everlasting impression on me, and when teaching anatomy and surgery, in the school attached to this College, I never lost an opportunity of teaching my pupils the astragalus injuries.

The following cases of fracture and dislocation of the astragalus occurred in my hospital and private practice :—

COMPOUND FRACTURE OF LEFT ASTRAGALUS.

CASE II.—A groom, aged twenty-five, was admitted into the City of Dublin Hospital, under my care, suffering from the effects of a severe injury to his ankle-joint.

History.—He was riding through one of the streets, the horse slipped and fell on his side, the man's foot was caught in the stirrup, which was bent by the weight of the horse's body. The young man was admitted into a surgical hospital and his foot was placed in a box splint. He suffered much pain for a couple of months and left the hospital, as he refused to submit to amputation of his foot. On admission to the City of Dublin Hospital I observed an opening at the inner side of the ankle-joint, through which unhealthy and foetid pus escaped. A probe quickly detected dead bone. Assisted by Mr. Tufnell I opened the joint and removed a fractured, loose astragalus. The joint was drained and the patient made a good recovery and left the hospital walking on the injured foot.

COMPOUND LUXATION OF THE LEFT ASTRAGALUS FORWARDS AND OUTWARDS ; EXCISION OF THE BONE ; RECOVERY WITH PERFECT USE OF THE FOOT.

CASE III.—M. R., aged twenty-six, was driving a horse in a high trap across Butt Bridge ; the back band broke, the shafts fell down, and the man jumped to save himself, and he landed on his left heel ; he suffered intense pain. Dr.

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Fitzgibbon, who was passing at the time, examined the man's foot and observed the head and neck of the left astragalus projecting forwards and outwards through a wound. He sent the man at once to the hospital, and I saw him shortly after his admission.

Appearance of injured foot.—Marked inversion, head and portion of the neck of the astragalus projecting through a small wound on the anterior and external aspects of the foot, *internal malleolus completely buried, a deep sulcus taking its place.* I decided to excise the bone, as it was evidently separated from all its ligamentous connections and its vascular supply cut off. Patient having been anæsthetised I made an incision over the displaced bone and removed it without difficulty. On examination a detached fractured portion was found involving the groove of the flexor longus pollicis. A good deal of inflammatory action followed this very serious foot lesion and abscesses formed. The patient made an excellent recovery, and is now employed as a van-driver and the foot is as sound as if no accident had occurred. There is considerable movement in the joint. This is the astragalus, and this cast [exhibited] was taken before the patient left hospital.

Measurement of legs :—

Injured leg—Inside of patella to ball of great toe, $18\frac{1}{2}$ in. ; sound leg, do., $19\frac{1}{2}$ in. Injured leg—Inside of patella to point of heel, $17\frac{1}{2}$ in. ; sound leg, do., 18 in. Injured leg—From point of heel to ball of great toe, 6 in. ; sound leg, do., 6 in.

COMPLETE DISLOCATION OF THE RIGHT ASTRAGALUS FORWARDS AND OUTWARDS, WITH ROTATION OF BONE ; EXCISION OF ASTRAGALUS ; PERFECT RECOVERY WITH VERY USEFUL FOOT ; GOOD FLEXION AND EXTENSION AT JOINT.

CASE IV.—Mr. K., aged sixty-nine years, a very healthy and robust man, was walking down one of the principal streets about 3 p.m. on 18th Dec., 1897 ; his foot slipped off the kerbstone, twisting the foot inwards ; he suffered severe pain and fell. He was admitted into a hospital and was attended by surgeons for eleven days ; his leg, foot, and thigh were placed in a box splint and Roentgen rays were employed.

I was summoned to see this gentleman on the 31st December. He was removed to his residence in an ambulance, as the box splint was too large to admit of being received into a cab. I found the patient in a most serious state ; pulse rapid, breathing

PLATE II.

**Showing M. R.'s foot six months after excision of astragalus. Bone
shown also.**

PLATE III.
M. R. two years after accident. From photo.

PLATE IV.

Mr. K.'s foot eleven days after accident. From original drawing by
Dr. Paul Carton.

oppressed, great nervous prostration. He said he had had scarcely any sleep from the time of his admission to hospital, and suffered intense agony. I removed the bandages and large box, and on exposing the right foot I at once recognised the case as one of complete luxation of the astragalus forwards and outwards. The foot was forcibly inverted; *the internal malleolus was completely buried (a deep sulcus occupied its place)*; the head of the astragalus formed a prominent tumour on the anterior and external part of the dorsum; the skin over the head of the astragalus was red and shiny; a large slough formed over the end of the fibula; another large slough existed between the deep groove on the inner side and the os calcis; bullæ formed on the foot also; at each side of the knee the skin was broken, due to splint pressure. The patient experienced immediate relief when all splint and bandage pressure were removed; boric stupes were applied to the oint; suitable diet and hypnotics were prescribed, the septic bronchitis was attended to; water cushions were placed under the hips, and the affected limb was placed and retained on a properly protected pillow. For nearly two months this gentleman's life was in the balance. His naturally good constitution and very temperate habits gave hope that his life and limb, with great care, might be preserved. Bullæ and abscesses were opened, sloughs became detached; bronchial irritation subsided, and on the 5th of March (about two months subsequent to the patient's return home) I operated. The drawing I exhibit was taken by my friend and former surgical resident, Paul Carton, M.B., B.Ch., and shows clearly the condition which I have described. The cast, which I also exhibit, was taken a few days before the operation. On examining it, and contrasting it with the cast which I show of the sound foot, it will be observed that the description is in no way exaggerated. The patient was anæsthetised, and the limb thoroughly prepared by my son, Surgeon Henry Croly, who was my chief assistant. I made a longitudinal incision, and came down at once on the head of the astragalus. I then found that the upper articulating surface was rotated outwards, the bone was firmly wedged in its abnormal position, and required some dissection and leverage with a "lion forceps" to remove it. *Immediately on removal of the astragalus (which I now exhibit) the foot came straight.* I applied a simple back splint with foot-piece, and had not any trouble in keeping the foot in a normal position. The patient bore the operation well, had no temperature worth recording, and, except a rapid pulse and much broken sleep, he made in the long run a most satisfactory recovery. He suffered

from a sharp attack of eczema, chiefly confined to the affected limb, which is now much better. He walks out in his grounds, enjoys the fresh sea breeze, has a *movable ankle*, and very little shortening.

Measurement of legs:—

Injured leg—From inside of patella to ball of great toe, 18 in.; sound leg, do., 19 in. Injured leg—From point of heel to ball of great toe, 7 in.; sound leg, do., 7 in. Injured leg—From inside of patella to front of heel, 18 in.; sound leg, do., 18 in.

Considering the age of this gentleman, the very severe and dangerous accident from which he suffered, and the complications which arose, I look on the happy termination as regards life and limb as one of the most important surgical triumphs, under Providence, which has occurred in my practice as a surgeon; and my best thanks are due to my son, Surgeon Henry Croly, M.D., for the valuable assistance which he rendered at the time of the operation and in the subsequent dressings. To the patient's invaluable nurse, "Mary," all praise is due; and to the patient's brother, Mr. John —, for his untiring attention to dietetic comforts.

Dislocations of the astragalus may be divided into two principal classes—those in which the astragalus is displaced from the os calcis and scaphoid bone, the joint of the ankle not being affected; and those in which the astragalus is dislocated from these bones and from the tibia and fibula also. The first are incomplete luxations, the second complete. The incomplete have been called *sub-astragaloid* by Broca, the complete have been called *double* dislocations by Boyer, a nomenclature adopted by Malgaigne.

Sub-astragaloid may take place in four directions—forwards, inwards, outwards, and backwards. They are frequently complete as regards the astragalo-scaphoid articulation, but incomplete as regards the calcaneo-astragaloid articulation. In the forward (sub-astragaloid) the head of the astragalus completely leaves the cavity of the scaphoid bone, and rests on the scaphoid and cuneiform bones. The body of the astragalus is thrown more or less forward upon the os calcis, its posterior sharp edge rests in the groove which separates the two articular surfaces of that bone, hence the difficulty in effecting reduction. In this case the joint of the ankle remains uninjured. The head of the bone being constricted in the

Fig. 2.

PLATE VI.

Fig. 1.—Mr. K.'s foot before operation. From cast.

Fig. 2.—Appearance of Mr. K.'s foot one year after operation.

Fig. 3.—Astragalus removed.

narrow opening in the capsule, or the head of the bone getting between the tendons, or the wedging of the astragalus between the tibia, os calcis, and os naviculare, may each contribute towards rendering reduction difficult.

In dislocations inwards (sub-astragaloid) from the os calcis and scaphoid, many cases are compound at the time or become so by sloughing, and are often accompanied by fracture of the malleoli.

In dislocations outwards (sub-astragaloid) from os calcis and scaphoid the foot is inverted, while the head of the astragalus causes a prominence upwards and outwards on the cuboid.

In dislocations backwards from os calcis and scaphoid (sub-astragaloid) the anterior part of the foot is lengthened.

On reviewing the cases which I have described as occurring in my own practice, of fractures and dislocations of the astragalus, and the cases which I have referred to recorded by surgical writers, I have come to the following conclusions, that:—

1. The term “sub-astragaloid” is confusing and misleading.
2. In dislocation of the astragalus the bone is either *partially* or *completely* separated from its surrounding articulations, and if a wound exists, and any portion of the bone protrudes, it is compound. The direction in which the bone is displaced is specified by the terms forward, backward, outward, inward, &c., &c.
3. In compound dislocation, with the head and neck protruding, the bone is so enucleated that its vascular supply is cut off, and though reduction might be effected, necrosis is certain to follow, necessitating the excision of the bone later on, meantime risking the patient's life by causing suppuration and septic trouble.
4. In compound fractures the sooner the bone is excised the better, the joint being drained.
5. In all simple partial luxations reduction should be attempted, and most probably success will be the reward of such praiseworthy efforts on the part of the surgeon. Tenotomy of the Achillis-tendo or tibial tendons may in some cases be considered necessary.

In the complete simple or double luxation, where the astragalus has left its box, *no efforts on the part of the surgeon*

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will effect replacement of the bone, and if its articular surfaces have undergone a change of position the bone must ultimately necrose. I advise immediate excision in these "*Listerian*" days as safer than allowing the bone to slough out, which always happens except in cases of luxation backwards, when it may be allowed to remain.

Mr. Turner says, in his experience in the majority of cases of dislocation of the astragalus there is an accompanying fracture of the bone. The bone may be fractured in the operation of extracting. Larrey and Boyer are in favour of extracting at once. It may be summarily stated in simple, direct, and complete luxation Turner advocates allowing the bone to remain in its new situation without any operation until it manifests a tendency to ulcerate the skin. To relieve tension an incision may be made over the dislocated bone, but its removal should be postponed. In complete compound luxation he advocates immediate removal.

Boyer says after the astragalus is extracted the tibia is approximated to the os calcis. The movements of the foot are abolished, and the member loses a part of its length equal to the height of the astragalus.

Boyer dissected a limb of a patient of Desault's, and found the tibia almost ankylosed with the calcaneum, but it does not follow that ankylosis should result.

Mr. Smith (Leeds) says his patient in each case had an excellent hinge-joint of the tibia on the os calcis.

In incomplete luxations of the astragalus the hook-like process of the astragalus may get fixed in the groove of the os calcis.

In dislocations backwards, allowing the bone to remain in its new situation has been most satisfactory.

Broca's classification of luxations of the ankle-joint has been adopted by surgical writers—viz. :—

1. Tibio-tarsal dislocation.
2. Sub-astragaloid dislocation.
3. Astragalus dislocation (or enucleation).

In my paper on compound luxations of the ankle-joint I entered fully into these important cases. My present subject is dislocations, simple and compound, of the astragalus proper, and on fractures of the bone.

Sub-astragaloid luxations are cases where violence having been inflicted—such as severe wrenches of the foot in running or jumping—the head of the bone is dislocated from the scaphoid, and rests on the dorsum of the foot externally or internally, *whilst the body of the astragalus remains in its box*. The differential diagnosis of sub-astragaloid luxations of the foot from partial luxations of the astragalus is, to say the least, not by any means easy even to experts. The appearances of the foot are almost identical, and reduction under chloroform can be effected in many instances. In each case if reduction cannot be effected the astragalus must be excised, either at the time or as a secondary operation.

Fractures of the astragalus as primary accidents are very rare. Fractures of the neck as a complication of luxation are not uncommon. The case of fracture which occurred in my hospital practice was caused by direct violence, the foot being caught in the stirrup when a horse fell heavily on his side. I exhibited the astragalus at a meeting of this Section. Excision of the bone is the proper treatment in such accidents, a very useful foot being the result.

In dislocations, complete or incomplete, an attempt should always be made to effect reduction. The patient should be anæsthetised, the leg flexed on the thigh, and the thigh on the pelvis, and extension made from the foot, the thumbs being applied to press back the astragalus. It may be necessary in very difficult cases to perform tenotomy of the Achillis-tendo. This practice was advocated and practised by Mr. George Pollock, Surgeon to St. George's Hospital, London. Before the days of aseptic surgery many surgeons hesitated before excising the astragalus at the *time* of the *accident*, preferring to operate when sloughs formed and nature attempted to expel the bone as a foreign body.

The vascular supply must be cut off in complete luxations; necrosis follows; operative measures therefore are called for.

DOUBLE OR COMPLETE DISLOCATION OF THE ASTRAGALUS.

In these cases the astragalus is displaced from all its articular connections—from the tibia and fibula as well as from the scaphoid and os calcis. These, like the partial or sub-

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astragaloid luxations, may take place in various directions—forwards, inwards, outwards, backwards, and also a rotatory dislocation—*luxation par rotation sur place* (Malgaigne)—in which the bone remains between the tibia and os calcis, but undergoes a movement of rotation on its vertical axis, and a dislocation *par renversement*, in which the bone becomes turned upside down.

In compound luxations of the astragalus the connection which the bone maintains is important—that portion of the bone forming the ankle-joint contributes nothing to its nutrition, the supply reaching it chiefly from its inferior surface.

When the astragalus has escaped entirely by the wound, even though it may preserve its connections with the tibia and fibula, the reduction would be followed by necrosis.

If bony ankylosis occurred the shortening of the limb should be greater than usually follows where granulations fill up to a considerable extent the gap left by excision of the astragalus. The anterior edge of the tibia is received in the cup of the scaphoid, and the cartilaginous surface of the tibia is brought into contact with the os calcis—a favourable condition for the formation of a false joint.

Malposition, or altered axis, are causes rendering insurmountable barriers to reduction. In lateral dislocations there is usually fracture of the malleoli.

A dislocation of the astragalus forwards occurred to the late Mr. Carmichael, F.R.C.S., of this city, caused by a fall from his horse. Reduction was effected by Messrs. Hutton and John M'Donnell. Result good.

Malgaigne mentions 26 examples of double or complete luxation—viz., 15 forwards and outwards, 7 directly forwards, and 4 forwards and inwards. Of the 26, 9 were simple and 17 compound. Forced extension of the foot is the most frequent cause of the dislocation forwards, and if there is inversion or eversion the bone takes, in addition, an oblique direction outwards or inwards. A case of complete simple dislocation forwards and outwards is recorded by Desault, and another by Dupuytren. Two others are recorded by Guthrie. When the astragalus is dislocated obliquely forwards and inwards the sole of the foot is directed outwards

and the outer edge of the foot is raised; the head of the bone is directed downwards towards the sole of the foot.

In compound luxations, with fracture of the neck separating the head from the body, the bone should be excised; the vascular supply being cut off necrosis would follow.

DOUBLE OR COMPLETE DISLOCATION OF THE ASTRAGALUS BACKWARDS.

Two cases are recorded by Mr. B. Phillips. The Achillis-tendo was pressed backwards by the displaced astragalus. Reduction was impracticable. Liston, Lizars, Nélaton, and Turner describe similar cases. In one case the astragalus diminished in size as if by absorption.

ROTATORY LUXATION OF ASTRAGALUS (LUXATION PAR ROTATION SUR PLACE).

The astragalus in some cases may undergo a rotation on its vertical axis, so as to be placed transversely, or with its head directed towards the Achillis-tendo.

Malgaigne gives four cases. In one by L'Aumonier the head of the astragalus protruded through the skin under the malleolus internus, between the tendons of the tibialis posticus and flexor longus digitorum, its trochlea being situated transversely, holding the tibia and fibula apart. In another, Denonvillière found the body of the astragalus separated by a fracture from the head of the bone, and rotated so as to cross the calcaneum at a right angle, with its trochlear surface protruding through the integuments.

DISLOCATION "PAR RENVERSEMENT."

Dupuytren, Malgaigne, and Mr. Smith, of Leeds, describe such cases.

Mr. Smith, of Leeds, gives two cases of "excellent hinge joints." Phillips gives two cases of hinge joints.

Some authorities recommend the removal of the bone, even when not irreducible, if it has been much separated from the surrounding parts, fearing that the loss of vascular supply would occasion its necrosis. It must be remembered that the astragalus is peculiarly circumstanced in this respect, by far the greater part of its surface being articular, and a

very small portion, comparatively with other bones, being available for the entrance of blood vessels. On this point Malgaigne observes that the question of reduction in compound dislocation of the astragalus depends entirely, in his opinion, upon the connections which the bone has preserved with the surrounding parts, and it is important to remember that this portion of the bone forming the ankle-joint contributes nothing to its nutrition, the elements of which reach it chiefly by its inferior surface. When the astragalus has escaped entirely by the wound, though its tibial and fibular attachments remain, necrosis is almost sure to follow. Malgaigne refers to 8 cases of reduction—3 were fatal and 1 ended in caries.

Chassaignac mentioned, in 1860, the necessity for amputation of the leg in these cases.

In the proceedings of the Surgical Society of Ireland, Feb. 22, 1865, two cases of dislocation of the astragalus were communicated by the late Dr. John Ridley, F.R.C.S., Surgeon to the King's Co. Infirmary. Case I. was one of compound dislocation forwards and outwards, in which the astragalus was removed at the time of the accident with the most satisfactory result. Case II. was also compound, in which reduction was effected with complete ultimate recovery.

In 1843 Dr. Morrison, of Newry, recorded a case of complete dislocation backwards of the astragalus. The bone was removed at the time of the accident, with perfect recovery.

The late Professor Williams and Mr. Tufnell placed on record two cases. Mr. Williams's case was luxation backwards; the bone was allowed to slough out. The result was not good as regards usefulness of the limb. In Mr. Tufnell's case, at which I assisted, the bone was thrown forwards, reduction was effected, and a useful limb resulted.

A case of compound luxation of the astragalus occurred in the practice of the late Mr. O'Reilly, in which the bone was reduced.

The late Mr. Jameson mentioned a case of luxation forwards and outwards of the astragalus, in which reduction was effected under chloroform. The limb was completely restored to use.

In the *Medical Press* of March 1, 1865, my friend, Dr.

Henry Hadden, F.R.C.S., published a very interesting case of compound fracture of the astragalus, with dislocation of its head forwards and outwards. The bone was successfully removed; the patient recovered, with a most useful foot.

In St. Thomas' Hospital Reports on sub-astragaloid luxations, the writer says:—“Foot violently in-twisted, and adducted like talipes varus. Outer malleolus very prominent, *inner could not be perceived*, so deeply was it buried.” Surely if the astragalus remained in its box the symptoms described above as *sub-astragaloid* could not be present.

Broca collected 78 cases of *simple* dislocation of the astragalus—of these 59 were irreducible, 19 were reduced.

Twice immediate extraction was performed—once successfully and once followed by death.

Secondary removal of astragalus was performed 25 times—24 recovered, 1 amputated.

Broca's statistics further show that about one-third of the cases terminated fatally in *primary excision* of the astragalus, and no death occurred in the *secondary* operations. Eighty cases (compound) reduction in 14; 9 recovered well; 5 recovered after secondary extraction; 3 died; reduction impossible in 68; 2 died from shock; 5 amputated; 3 died; 2 recovered. Immediate excision gave in 57 cases 41 recoveries, 16 deaths. Complete removal of astragalus—86 cases, 17 deaths; primary excision 59 times, 17 deaths; *secondary excision 27 times without a death.*

A case is recorded by Norris, of Pennsylvania, in which the astragalus was completely expelled through a wound on the outside of the ankle, and was picked up from the ground. The patient died of tetanus.

In a paper on sub-astragaloid luxations of the foot, in St. Thomas' Hospital Reports, the writer says:—“Probably in most cases where it is needful to amputate, Syme's, Pirogoff's, or even Dupuytren's sub-astragaloid operation could be performed with advantage.” The same writer says:—“The most desirable result that can follow excision of the astragalus is ankylosis of the foot to the leg, and the treatment should aim at procuring this.”

In compound luxation the sooner the bone is excised the better. No cases demand immediate diagnosis and prompt

treatment more than the luxations and fractures of the astragalus.

In the compound luxation case which I have described the neck and head of the bone protruded. I excised immediately. The bone was detached from all its ligaments, and portion of the bone near the groove for the flexor pollicis tendon was fractured. I saw the young man quite recently; he is driving a van, and can jump up and down, and is not lame. His foot is as useful as the uninjured one.

The case of Mr. K., aged sixty-nine years, was one of unusual severity. When I saw him, eleven days after the accident, his condition was most alarming; two large ashy-grey sloughs formed, one at the inner side of the foot, the second over the external malleolus, and a shiny spot over the head of the astragalus. The heel also was deeply ulcerated from splint pressure. The pulse was rapid; temperature high; tongue furred and dry; considerable dyspnœa; bronchial râles; and almost sleepless nights. I dared not operate under such circumstances.

The patient's residence at the seaside was most favourable for the improvement of his general condition. He took plenty of light, nutritious food; the sloughs were carefully dressed with aseptic dressings; the limb supported on pillows; tonics and bromides were given to quiet the nervous system. The astragalus was not only displaced completely from the tibia and os calcis, but was rotated outwards. There was wedging, and adhesions existed which necessitated a careful dissection, the bone being held firmly in the lion forceps. There was not any fracture of the astragalus, or of the tibia and fibula. This gentleman, whose foot has been examined by the members, has a *movable ankle*—can flex, extend, and walk well.

It will be seen from the above statistics that, *before the days of Listerism*, primary excision of the astragalus was by no means favourable as regards life, whilst *secondary* removal of the astragalus was very favourable.

I advise *immediate* excision in all cases of irreducible luxation of the astragalus in this "*Listerian*" period.

ART. XIII.—*Mercury in Diseases of the Heart.*^a By WALLACE BEATTY, M.D., F.R.C.P.I.; Physician to the Adelaide Hospital.

It is interesting and instructive to note how certain remedies, which the keen observers among the physicians of the first half of the present century regarded as of great service in the cure or alleviation of disease, fell into more or less disrepute with succeeding physicians, but are now regaining somewhat of the reputation they had lost. I may mention venesection, antimony, and mercury (in other diseases than syphilis). Thus Osler recommends venesection in cardiac dilatation with cyanosis, and regrets that he has not adopted this treatment more frequently; antimony (tartar emetic) is strongly lauded by Jonathan Hutchinson and Malcolm Morris in acute inflammatory cutaneous affections (I can bear my testimony to its utility in such cases). It is of the use of mercury in chronic diseases of the heart that I propose to speak at present. Acute endocarditis and pericarditis do not come within the scope of this communication. It may appear unnecessary in this city to extol the use of mercury in the treatment of diseases of the heart, when one of Dublin's, and the world's, greatest physicians—Stokes—has, in his famous work on diseases of the heart and aorta, borne personal testimony to its immense value. Yet it is at times well to review the extent and limits of usefulness of well-known remedies, and compare one another's observations; and, moreover, I have thought it worth while to bring this subject forward, as I have from time to time met physicians who have not appeared to know the full value of mercury in heart diseases, and in the writings of the present day there does not appear to be sufficient stress laid upon the utility of this drug. Thus I can find but scanty allusion to the use of mercury in Byrom Bramwell's admirable work on diseases of the heart.

I propose to consider as briefly as I can—

- I. The cases in which mercury is of real value.
- II. The modes of its administration.
- III. The manner in which it acts.

^a Read before the Section of Medicine of the Royal Academy of Medicine in Ireland on Friday, December 16, 1898.

(I.) THE CASES IN WHICH MERCURY IS OF REAL VALUE.

(1) Of all conditions in which mercury is useful the one in which it is most certain to do good is this—general venous engorgement due to chronic primary mitral valve disease. In a typical case there is a rapid, irregular, compressible pulse, physical signs of dilatation of heart, a regurgitant or obstructive mitral murmur, full and pulsating cervical veins, an enlarged, congested liver, high coloured, scanty, and albuminous urine from congested kidneys, anasarca, and perhaps some ascites; in short, all the evidences of back pressure.

(2) The cases of general venous engorgement dependent upon mitral incompetence (relative incompetence) secondary to old-standing aortic regurgitation.

(3) Cases of dilatation of the heart with general dropsy, but yet no obvious valvular disease, there being no murmur and no evidence of kidney disease.

(4) Cases of general venous engorgement from failure of the right heart, caused by severe emphysema and bronchitis.

(5) Cases of general venous engorgement due to cardiac dilatation following upon long-continued hypertrophy of the left ventricle, due to chronic interstitial nephritis.

In all these cases there is general venous congestion due to back pressure, and it is in such conditions of the heart that mercury proves most valuable.

(II.) THE MODES OF ITS ADMINISTRATION.

If we select a typical case of general venous congestion dependent on failure of compensation in chronic mitral valve disease, there are four *principal* ways in which we may hope to relieve the heart and remove the congestion.

1. By increasing the power of the heart (digitalis, squill, strophanthus, and strychnine are the most generally useful to effect this object). 2. By diaphoretics. 3. By purgatives. 4. By diuretics.

Diaphoresis is of very limited usefulness; in severe cases the patient has orthopnoea, and the administration, *e.g.*, of hot air baths to cause sweating is not readily manageable. Pilocarpine is a depressing and sometimes dangerous remedy. The depression likely to ensue from diaphoresis,

and especially the fact that it can at most only give very *temporary* relief to the loaded veins, are limits to its possible usefulness. With regard to purgatives: If the patient is strong it is well to commence treatment by free purgation, and repeat the purgation every two or three days. Many patients are, however, too weak to bear purgatives, and we must then rely upon cardiac tonics and upon diuretics. The advantages of diuretics are—their action is *continuous*, and is not attended with the depressing effect which follows upon diaphoretics or purgatives. Our main reliance must, therefore, be placed upon heart tonics and diuretics—in both the action is *continuous*.

I leave out of consideration such special treatment as bleeding, puncture, &c.; also the questions of rest, diet, stimulants, as my object is to dwell solely upon the uses and action of mercury.

Mercury is administered in heart disease for both its purgative action and its diuretic action.

Most physicians use mercury in purgative doses or combined with other purgatives, giving it occasionally in the course of other treatment. It is thus mercury is administered by Sir William Broadbent. He writes*—"With venous obstruction the liver will be enlarged and greatly congested, perhaps pulsating, and one of the first objects of treatment is the relief of the engorgement of the liver. The best results are undoubtedly to be obtained, according to my experience, from purgatives, in which calomel or other mercurial preparation is a constituent—such as calomel and compound jalap powder, calomel, blue pill, or grey powder with colocynth and hyoscyamus, followed or not by salines. Hydragogue cathartics of greater violence may be necessary in some cases, but the effect on the liver and heart is not proportional to the degree of purgation, and the relief of the dropsy is not due simply to the amount of liquid carried off by the intestinal surface, but is frequently the effect rather of the diuresis which follows improvement in the circulation. Digitalis is often useless, and appears only to add to the embarrassment of the heart, and to produce sickness until the way has been cleared for its operation by a mercurial purge, and when its good effects on the heart

* Heart Disease. P. 108.

seem to be expended a fresh start will often follow a calomel and colocynth pill."

Again, Sir William Broadbent, writing on the treatment of dilatation,* observes—

"Calomel or blue pill or grey powder should be given in doses of from 1 to 5 grains, according to the urgency of the case, with colocynth and hyoscyamus or rhubarb, followed by some mild saline. After one or more full doses at the outset a moderate dose may be given every second or third night."

Mercury may be administered almost or exclusively for its diuretic action, in small doses frequently repeated, and this is the method which has proved most successful in my hands. The plan I adopt is as follows:—I give a pill containing half a grain of calomel usually along with digitalis and squill, every four hours night and day, for from 10 to 14 days. If these pills should tend to cause purgation I give them combined with opium. I commonly order two sets of pills—one set containing calomel half a grain with squill and digitalis, the other set containing the same together with one-eighth to half a grain of powdered opium. The nurse is directed to give a pill every four hours either with or without the opium, according to circumstances; one or two motions in the 24 hours is all I think well to allow. It often happens that very few or even no opium pills are needed during the period of the administration of the mercury. After 5 or 6 days an improvement in the condition of the patient generally shows itself, or, if not so soon, in about 8 days, when free flow of urine, as much as 100 ounces in the 24 hours, and a concurrent subsidence of the dropsy manifest themselves. In the next few days the symptoms of general venous engorgement diminish rapidly. At the end of about 14 days the gums may be a little sore; I then stop the mercury and order iron (generally citrate of iron and ammonia) combined or not with digitalis, according to the condition of the pulse. Once the dropsy has disappeared entirely or almost entirely, the amount of urine secreted falls to, or almost to, the normal. This method of administering mercury, relying on its diuretic action solely, is specially useful in feeble patients, who would be exhausted by frequent pur-

* Heart Disease. P. 264.

gation, and though at the end of a mercurial course some patients may feel weak, they will be relieved of their distressing symptoms, and after some days' use of iron, &c., the strength rapidly returns. This treatment may be repeated again and again every now and then when recurrences of general venous congestion manifest themselves, and again and again complete relief of longer or shorter duration may be obtained. In this connection I may mention the case of a lady who was under my care several years ago suffering from mitral regurgitation, enormous dilatation of the heart, and general venous congestion, with very marked anasarca. I treated her for several days with Baillie's pill (blue pill, squill and digitalis), and was disappointed to find no improvement in her condition. Dr. Head then saw her with me. He remarked, "For this case blue pill is too slow; change it to calomel." After a few days treatment with calomel the dropsy disappeared, and a course of iron was followed by some weeks of comparative ease; she was able to go out on fine days. Again and again when the circulation became embarrassed the mercurial course was resorted to, followed by a course of iron and digitalis, and again and again the treatment was followed by relief. She lived for about two years. It is interesting to note that the marked dropsy of the lower extremities which was present in her first attack never recurred, but the back pressure was almost entirely directed into the liver, which, with each attack, became swollen to an enormous size.

One other case I may allude to. An old gentleman of about 80 years of age, suffering from mitral regurgitation with enormously dilated heart, who had been treated with digitalis, occasional purgative doses of calomel, and nightly hypodermic injections of morphia, was completely relieved of his symptoms for a time by a course of calomel given every 4 hours. He lived for about 2 years, and never again required morphia for rest and sleep at night. Every now and then he resorted to the calomel course.

In this case the complete relief afforded by a course of frequently-repeated doses of calomel, contrasted with the failure of occasional purgative doses, was very remarkable.

We may, of course, meet with some cases in which

mercury is not well borne, but these are very exceptional: of course a time comes when mercury fails.

The state of the pulse will determine whether mercury is to be given alone or in conjunction with digitalis and squill; most commonly it is best given in combination, and mercury would appear to act as an adjuvant to digitalis, the action of the digitalis being aided by the diuretic effect of mercury. Dr. Little, in his lecture on "The Resources of the Physician in the Management of Chronic Diseases of the Heart," writes—"If we were compelled to have only one remedy (in cardiac dropsy) I have no hesitation in saying that remedy should be the old-fashioned pill of blue pill, squill and digitalis, yet I think sometimes one and sometimes another of the ingredients in the time-honoured Baillie's pill is unnecessary." And again, "As a rule, we may say: that when the liver is greatly swollen calomel or blue pill is required, with digitalis if the pulse is frequent and irregular, without digitalis if the pulse is not frequent nor irregular."

In the *Lancet* of Sept, 28th, 1895, p. 779, Dr. William Murray, of Newcastle-on-Tyne, extols the use of mercury in heart disease, and illustrates his remarks by a notable case.

The beneficial effect of mercury in heart disease is thus graphically described by Stokes—"I do not wish it to be believed that by mercury we can cure dilatation of the heart, but many years' experience has convinced me that by the use of this remedy we can delay its production, remove the irregular action which assists in causing the disease, and, above all, prolong the patient's life, and, again and again, relieve him from dropsy, and from pulmonary and hepatic congestion, even when they have arrived at a point which threatens a speedy dissolution." And again in describing the action of mercury in patients suffering from general venous congestion from heart disease—"Under all these terrible symptoms it happens again and again that the exhibition of mercury will, as by enchantment, remove the anasarca, reduce the hepatic tumour, restore the heart to its ordinary, though not its normal, condition, and for a period of time, more or less long, enable the patient to pursue the avocations of an active and laborious life."

Mercury acts well in the other conditions mentioned in

the early part of this communication, and I prefer generally to administer it in the same way as in primary mitral valve disease with general venous congestion. I need not allude to the treatment of these conditions, except to the cases of dilatation of the heart secondary to hypertrophy of the left ventricle which occurs in chronic Bright's disease. When the heart begins to fail and dilatation occurs in chronic interstitial nephritis, and the symptoms of general venous congestion from back pressure make themselves manifest (a desperate case indeed), mercury often acts extremely well, and though one cannot look forward with the confidence that one may in primary cardiac disease to a good result, still a temporary good result often is effected. In this complication of Bright's disease mercury is certainly not contraindicated.

(III.) THE MANNER IN WHICH MERCURY ACTS.

Clinically the good effect of mercury in cardiac disease is recognised by a copious flow of urine, with concurrent disappearance of the dropsy, but how this diuresis is brought about is still a matter of conjecture. If we study the action of diuretics we find that they act mainly in one of three ways:—

1. By increasing the force of the left ventricle, and so increasing the pressure in the renal arterioles.

2. By dilating the afferent arterioles of the kidney, and so bringing more blood to the kidney, with consequent increased secretion.

3. By stimulating the renal epithelium to increased secretory activity.

We know that mercury stimulates the salivary glands; it is probable that a similar action of mercury on the renal epithelium partly accounts for the increased secretion. Yet this does not appear to explain fully the action of mercury in cardiac dropsy, as it is a notable fact that the remarkable increase of secretion which is brought about by mercury in cases of cardiac dropsy (amounting to a flow of 80 to 100 ounces or even more of urine in the 24 hours) only continues as long as there is dropsical fluid to be absorbed. Mercury may, therefore, act by increasing the activity of absorption, and so the diuresis which follows may be simply the removal

of the excess of fluid re-absorbed. However, from the circumstance that the back pressure from the heart must be felt not only by the veins but by the lymphatics, which eventually open into the veins, the circulation through the absorbing lymphatics must be largely interfered with; therefore the probability of the action of mercury being *exclusively* one of stimulating absorption is hardly likely. If mercury acts both by increasing the activity of absorption and at the same time increasing the activity of renal secretion its good effect in cardiac dropsy can be partly understood.

But the action of mercury on the liver must also be taken into account.

Sir William Broadbent explains the good effect of mercury in heart disease by its action on the liver. He writes^a—"Mercurial purgatives have the effect of diminishing arterio-capillary resistance and of lowering arterial tension, and therefore of relieving the heart. The hypothesis by which it seems to me it is best explained is that mercury influences the liver chemistry and promotes the elimination of impurities which when retained in the blood give rise to resistance in the capillaries. Mercurial purgatives then have the double effect of depleting the portal system while relieving the enlargement of the liver and the distension of the right side of the heart, and of diminishing the resistance in the peripheral circulation and so relieving the left ventricle of stress."

This hypothesis is a very plausible one, but a difficulty I find in its acceptance is that in a large number of cases in which the good effects of mercury are observed the pulse is both small and very compressible; no evidence of arterial resistance.

In conclusion, I do not wish to be understood to advocate mercury in every case of mitral valve disease with symptoms of imperfect compensation. In many cases occasional resort to digitalis and other cardiac tonics is sufficient to restore the deranged circulation; but when digitalis and other cardiac tonics fail, the use of mercury is often attended with the happiest results.

I have dwelt, accordingly, at length upon the action of

^a Heart Disease. P. 263.

mercury in chronic heart disease, because I wish to bear my testimony to its immense usefulness, and because I wish to emphasise the fact that while in some cases it may be administered with advantage in occasional purgative doses, in a large number it is best and most successfully given in small, frequently-repeated doses for about a fortnight at a time, with the object of causing free diuresis, any tendency to purgation being kept in check by combining the mercury with opium.

ART. XIV.—*The Reaction of the Intestinal Contents in Man.*

By J. J. CHARLES, M.D., F.R.S.E.; Professor of Anatomy and Physiology, Queen's College, Cork.

THERE has been much difference of opinion amongst physiologists as regards the reaction of the intestinal contents in the higher animals. Litmus, methyl orange, and phenolphthaleïn have been used by some investigators to test the reaction, whether acid or alkaline, and if acid, to determine whether the acidity is due to an organic or an inorganic acid. But as in most cases litmus only has been employed as the indicator, I shall in this communication refer to the results which have been obtained with it alone.

The reaction of the contents of the *small intestine* was carefully examined by Moore and Rockwood¹ in the rabbit, guinea pig, and white rat, and was found by them to be alkaline the whole way; but in the dog it was observed to change from above down, being neutral or faintly acid or alkaline near the pylorus, acid lower down, and less acid or even alkaline near the cæcum. They say that by analogy "the small intestine in man cannot have an acid reaction under normal conditions in any considerable part of its length." Gillespie,² from recent observations, has come to the conclusion that in the dog and calf the contents are acid throughout, the acidity being greatest in the duodenum, where it exceeds that of the stomach, and that the reaction in man is probably acid. But the most important results are those which were obtained some years ago by Ewald and by Macfadyen³ from two patients who had each a fistula of the ileum at its junction with

the colon. The reaction of the discharge from the fistula in both cases was acid. Moore and Rockwood are of opinion that these observations are not conclusive in their application to normal cases, because the lower end of the ileum in its relation to the fistula or outer world corresponds, they say, to the large intestine in its relation to the anus, and that as bacterial action should on that account be there well pronounced, the acid reaction ascertained by Ewald and by Macfadyen is readily explained. But in reply to this criticism it may be remarked that there is no proof that bacteria pass into the intestine to any appreciable extent either through a fistula or through the anus.

The reaction of the contents of the *large intestine*, according to Moore and Rockwood, is mostly alkaline in the rabbit and white rat, but acid in the guinea pig; whereas in the dog it varies, being acid or alkaline. However, in all these animals they found the reaction of the contents of the cæcum to be usually acid. Gillespie has ascertained that the reaction in the dog and calf is acid, even more so than in the stomach or duodenum! He believes the reaction in man is acid.

I have made observations on rabbits and kittens, but I have not always obtained the same results. Without entering into the details of each case, I may mention that the contents of the small intestine in rabbits in some cases were acid, and in others alkaline, and those of the large intestine were less acid and even alkaline towards the lower end. The contents of the cæcum were usually acid. I have also tested the reaction of the contents in human bodies before they have been injected for use in the dissecting room. No doubt, such results are not by themselves to be relied on, because changes due to fermentation take place in the alimentary canal soon after death. But it is worthy of note that these results fairly coincide with those obtained by Macfadyen and others on man during life. Thus I found the contents of the small intestine acid, those in the duodenum being perhaps somewhat less acid than in other parts, the contents of the cæcum acid, of the transverse colon alkaline or acid, of the sigmoid flexure alkaline or neutral, and of the rectum alkaline. But I am convinced that the reaction in man as well as in other animals is not

constant, and this may account in part for the marked discrepancy in the results of different observers. The difference in reaction may be produced either by an alteration in the character of the food, or in the length of time at which the examination is made after food has been taken, or by a possible variation in the activity of the ferments of the pancreatic juice in setting free fatty acids from fat, or by fermentation, especially if the digestion at the time should be abnormal. In man I believe the reaction of the contents of the small intestine in normal digestion is mostly acid. The acidity, according to Macfadyen, is equivalent, as a rule, to a solution of acetic acid, 1:1,000, and is probably due in the duodenum to hydrochloric acid, and lower down to lactic and other organic acids, the product of fermentation. The reaction of the large intestine is, I think, generally alkaline, because the secretion of the colon, which exceeds in alkalinity that of the small intestine, more than neutralises the acid produced in the contents by fermentation.⁴ This is interesting as affording an explanation of the way in which the action of bacteria is hindered in the small intestine by the acid medium, and perhaps by the antiseptic bile acids (at least in the duodenum); whereas it is, for the most part, not much interfered with in the large intestine. There is now no longer any difficulty in understanding the action of trypsin in an acid medium, for there is experimental evidence to show that it will digest proteids in the presence of 0·012 per cent. of hydrochloric acid, or of 0·05 per cent. of lactic acid.

The fæces are almost invariably alkaline. They may be acid, but this reaction generally indicates abnormal digestion, with much acid fermentation. The reaction of the fæces is a test which might be more employed by physicians in forming an opinion as to the state of the digestion in the intestines. Escherich has directed attention to this matter, and has given directions regarding the diet to be used in accordance with the reaction of the fæces.

REFERENCES.

¹ Journal of Physiology, 1897; and Proceedings of Royal Society, 1897.

² Proceedings of Royal Society, 1897.

³ Gamgee's Physiological Chemistry. Vol. II. P. 449.

⁴ Gamgee's Physiological Chemistry. Vol. II. P. 457.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Exceptions to Colles's Law. By GEORGE OGILVIE, B.Sc., M.B., Edin.; M.R.C.P., London; Physician to the Hospital for Epilepsy and Paralysis, Regent's Park. From Vol. 79 "Medico-Chirurgical Transactions."

THIS paper, which has been republished as a pamphlet, is of special interest to the readers of the DUBLIN JOURNAL OF MEDICAL SCIENCE on account of the association of the great teacher, Abraham Colles, with the Medical School of Dublin. Indeed, some apology is due to the author that through an accidental oversight an earlier notice has not appeared in our journal. From 1837, when Colles propounded the doctrine that the healthy mother of a congenitally syphilitic child might safely nourish her own infant, the medical profession throughout the whole world has, up to a very recent date, unanimously accepted his authority as sufficient to justify the medical attendant in permitting a healthy mother to nurse her own syphilitic offspring. Although some 25 cases of so-called exceptions to Colles's law have been reported within the last quarter of a century, in 1881 Berkley Hill said it had never been conclusively controverted, and in this statement we fully concur. Mr. Ogilvie gives two selected cases as examples, which he considers as conclusive as any recorded clinical facts can be of the possible fallibility of Colles's law. The first is Ranke's case, the second Merz's case. In the former the mother had borne a syphilitic child in the first year of her married life, but remained free from any evidence of syphilis herself until after her second confinement at the end of her third year of married life. The second child developed a macular syphilitic eruption when only two weeks old, and ulcers at the angles of the mouth. Whilst suckling this child the mother got a sore breast, which developed into what appeared to be a typical hard chancre, followed by complete syphilis.

Merz's case appears more conclusively to controvert Colles's law. Here a healthy woman, married to an admittedly syphilitic husband, became pregnant in the first year of her married life, and was delivered of an apparently healthy child at full time, both mother and child being *ad huc* free from any evidence of syphilis. In about two weeks the child became the subject of obviously syphilitic sore mouth. The mother was permitted to continue to nurse it on the faith of the infallibility of Colles's law. She got a sore on her breast, which became hard, and was followed by complete syphilis.

To anyone not familiar with the inexhaustible vagaries of syphilis, and particularly of latent syphilis, these cases must appear as conclusive evidence that it is not safe to rely implicitly upon Colles's law, and allow apparently healthy mothers to nurse their own syphilitic offspring. To us they do not bring conviction that Colles's law has been controverted by them. In Ranke's case we have no doubt the mother was the subject of latent syphilis from her first pregnancy, and that the fever consequent upon the contraction of a sore breast roused the latent syphilis into activity.

The same explanation would account for the development of complete syphilis in the mother of the second or Merz's case, apparently through infection from a sore breast, which assumed the outward appearance of a hard primary sore, when in reality it was only an excoriation, which, from the presence of latent syphilis contracted by the woman during pregnancy, assumed syphilitic characters, which were followed by complete syphilis.

For our part we do not think that Colles's law has been controverted by any cases yet published, as it is impossible to know whether the mother of a syphilitic child is or is not the subject of latent syphilis, which may become active upon any provocation such as the febrile disturbance occasioned by a sore breast. We should be sorry to see the syphilitic children of apparently healthy women deprived of their only chance of life, by denying them their mother's milk, on the feeble evidence that we have of the possibility of their transmitting the disease to her contrary to the law of Colles.

We have also a work before us by Mr. Ogilvie on the so-called "Law of Profeta," which is the converse of Colles's law. It is of interest also to any one engaged in the study and observation of venereal diseases.

Syphilitic Diseases of the Spinal Cord. By R. T. WILLIAMSON, M.D. Manchester: Sherrett & Hughes. 1899. Pp. 127.

THIS valuable monograph gives a detailed account of the syphilitic affections of the spinal cord, founded largely on cases observed by the author in the Manchester Infirmary, either under his own care or under the charge of the other physicians. It deals only with diseases produced by acquired syphilis—those resulting from hereditary syphilis are very rare, and examples of them have not occurred in the author's practice. The text is illustrated by several drawings, which with one exception are original.

The text is divided into thirteen chapters. In the first, devoted to ætiological considerations, the rarity of syphilitic spinal disease is pointed out. In ten years 14,575 medical cases were treated in the Infirmary. Of these 2,456 were diseases of the nervous system, among which there were 118 cases of locomotor ataxy, and only 32 of spinal syphilis. Pure spinal syphilis is rarer than cerebral, or cerebro-spinal syphilis. The disease is more common in males than in females, is most frequent between the twentieth and fortieth years of age, and while it may occur at any date after infection, is met with in more than half the cases within the first five years. The early syphilitic symptoms may have been slight or severe, but in general the antisymphilitic treatment was continued for only a short time. The influence of predisposing causes, as cold, injury to back, &c., is doubtful.

In the second chapter are general considerations respecting the pathological anatomy and clinical forms of spinal syphilis. The following are the most important pathological changes produced in the cord by syphilis—(a), diseases of the blood-vessels—endarteritis and periarteritis, endophlebitis and periphlebitis; (b), partial or

complete obstruction of the blood-vessels by thrombosis or thickening of the vessel wall, and changes resulting therefrom—*e.g.*, softening, degeneration, hæmorrhages; (*c*), inflammation of the meninges or of the cord; (*d*), gummatous infiltration of the cord or membranes; (*e*), true circumscribed gummata of the cord or membranes; (*f*), sclerosis, secondary to destruction of nerve-elements, produced by the processes previously mentioned; (*g*), a chronic post-syphilitic degeneration—locomotor ataxy. Of these gummata are the clearest indication of the syphilitic nature of the disease, while the vascular changes are somewhat less conclusive.

A useful table is given of the different clinical forms of spinal syphilis, and of the pathological conditions associated with each.

Of the 32 cases of spinal syphilis observed, 16, or one-half, were examples of meningo-myelitis, 6 of acute paraplegia ("acute myelitis"), 4 of chronic syphilitic spinal paralysis (Erb's), 3 of chronic syphilitic meningitis, and 1 each of gummatous tumour of cord, hemiplegia, and pseudo-tabes.

The third chapter contains general remarks on the diagnosis of spinal syphilis. The most important points are—the history of previous syphilitic infection, signs of present or previous syphilitic disease in various parts of the body, the presence of cerebral symptoms, the relatively slight intensity of the cord disease as compared with the extensive area involved, the temporary presence of Brown Séquard's symptom—*i.e.*, paralysis of one leg and anæsthesia of the other, the peculiar fluctuation of the symptoms, indications of a multiplicity of lesions, the presence of symptoms of meningitis and irritation of nerve roots, and improvement under antisiphilitic treatment.

In the following chapters the different clinical forms of spinal syphilis are described, and numerous cases detailed.

As a result of a critical inquiry into the connection between syphilis and locomotor ataxy, the author concludes, "though tabes may be regarded as a post-syphilitic degeneration in the majority of cases, it can scarcely be looked upon as a form of spinal syphilis in the strict sense."

A condition, however, in which at one stage tabetic symptoms manifest themselves, has been occasionally observed in spinal syphilis. In such cases of pseudo-tabes the symptoms, which are transitory, are probably due to syphilitic lesion of the meninges invading the posterior columns of the cord and the posterior nerve-roots.

The prognosis in spinal syphilis depends very much on the form of the affection. Of the 32 cases observed by the author 9 died, 10 recovered, and 13 remained stationary, or varied from time to time until the patient passed from observation. Of the fatal cases 5 were acute myelitis, 1 Erb's syphilitic paralysis, 1 gumma in cord, 1 hemiplegia, and 1 meningo-myelitis. The 10 cases which recovered included 5 of meningo-myelitis, 3 of meningitis, 1 of acute myelitis, and 1 of pseudo-tabes.

As regards treatment, a combination of mercury and iodide of potassium is recommended.

Chemical and Microscopical Aids to Clinical Diagnosis: being a Guide to Urinary, Gastric, and other Analyses employed in Practical Medicine. By CARSTAIRS C. DOUGLAS, M.D., B.Sc. Glasgow: James Maclehose & Sons. 1899. Pp. 258.

THIS is a useful summary of the more important applications of chemistry and microscopy to clinical research. The methods of analysis are, on the whole, well chosen, the details of the different operations are clearly given, and the reactions are explained, so that the processes may not be merely an exercise of empiricism.

The subject of bacteriology is not dealt with, the author rightly thinking that it is sufficiently large to claim a separate work for itself.

The greater part of the volume is occupied with the urine, whose general characters and normal and pathological constituents are treated of in successive chapters in a satisfactory manner. We note that the only method given for the quantitative estimation of urea is the hypobromite. The method of Mörner and Sjöqvist is not mentioned, although Kjeldahl's method for the estimation of nitrogen is described.

The uric acid is directed to be estimated by Hopkins's method, while the views of Roberts, that the uric acid exists in the urine as quadrurate, are accepted.

A chapter is devoted to the detection of the different proteid bodies which are met with as pathological constituents in the urine. The methods of detection, and the precautions which must be taken in order to escape fallacy, are fully and clearly laid down.

In the chapter on the sugars most space is, of course, devoted to glucose, but the characters of levulose, lactose, pentose, iso-maltose, and glycuronic acid are given, as well as the methods for the detection of acetone, aceto-acetic acid, and oxybutyric acid.

In the account of the blood pigments in the urine a chart of spectra, reproduced from Halliburton, is given, but the description of the use of the spectroscope is rather meagre. It is rightly stated that Pettenkofer's reaction for bile acids is useless when applied directly to the urine suspected to contain these bodies. A method of Oliver and one of Dragendorff are described for the detection of bile acids. The latter consists in removal of the bile salts by prolonged agitation with chloroform, extraction of the chloroform by alcohol, evaporation of the alcohol, and the application of Pettenkofer's test to the residue.

The diazo reaction is described, but treated as of little value. Good directions are given for the examination of the different urinary deposits and calculi, and a useful section on the preparation, for teaching purposes, of artificial pathological urines concludes the first section.

In the second section are two chapters which deal with the analysis of the gastric fluids. The methods for obtaining the contents of the stomach by the tube are given, and the use of test meals is fully described. The general characters of the gastric juice, the acid, the ferments, and the abnormal substances found in the gastric contents all receive sufficient description. Leo's and Toeffer's methods for the quantitative estimation of hydrochloric acid, and the methods of Hübner and Seeman for that of organic acids generally, are given in detail. The absorptive power of the stomach is directed

to be determined by Penzoldt's iodide of potassium method, and the motor power by Ewald's salol method.

The third section is on the examination of the saliva and sputum. Here the author gives some bacteriological methods for the detection of tubercle, pneumonic, and diphtheritic bacilli, as well as for leptothrix, thrush, and actino-mycosis.

The following section is on the blood. It is stated that the blood is isotonic with a solution of common salt of from 0.44 to 0.48 per cent. This is too low; human blood is isotonic with a solution of the strength 0.9 per cent.

In the section on fæces some account is given of the different intestinal parasites. We should like to have seen this somewhat fuller, and figures given of the ova of the different worms.

There is a section on the pathological fluids, and one on the animal and vegetable parasites met with in the skin and hair concludes the volume. This last section is rather inadequate to the importance of the subject, consisting as it does of only six pages and one drawing.

On the whole we would strongly recommend this book to our readers. The brevity, clearness, and orderly arrangement will make it most useful to every practitioner.

Notes on the Feeding of Infants. By LANGFORD SYMES, F.R.C.P. (Irel.); Physician to the Dublin Orthopædic Hospital; Physician to the Homes for Destitute Children, &c., &c. Dublin: Fannin & Co. 1899. Pp. 43.

AN admirably simple pocket note book on "The Feeding of Infants" is this little treatise by Dr. Langford Symes. Master of the subject, the author has succeeded in compressing into some three dozen pages of long primer type a wonderful amount of information on infant feeding—information which is founded equally on science and on common sense.

The key to the character of the book is contained in the triplet of quotations from Hippocrates and Sydenham which Dr. Symes has adopted as the motto of his useful little work. "With NATURE for my guide," wrote Sydenham more than two centuries ago, "I should swerve not a nail's

breadth from the true way." Dr. Symes has taken Nature for his guide, and so he has produced a safe and useful note-book on an intricate and important subject.

For convenience, the note-book is divided into three parts. The first describes the proper feeding of infants under one year, the second is for infants over one year, and the third offers suggestions for the management of cases in which the food disagrees. If dyspeptic conditions, vomiting, pain, flatulence, or colic, should arise, it is evidence that the food is disagreeing. The author lays down the golden rule that delicate infants and these showing signs of feeble digestion must be fed under their age.

There is no opening for adverse criticism in these "Notes," which should be in the hands of all nursing mothers and children's nurses, as well as in those of medical practitioners.

Burdett's Hospitals and Charities, 1899. Being the Year Book of Philanthropy and the Hospital Annual. By SIR HENRY BURDETT, K.C.B. London: The Scientific Press. 1899. 8vo., Pp. 1103.

REALLY the best way to describe the special features and scope of this work is to quote verbatim the first of two inverted pyramids which decorate its title page. The second inverted pyramid contains a catalogue of the author's contributions and work. Well, then, this annual contains "a review of the position and requirements, and chapters on the management, revenue, and cost of the charities, an exhaustive record of hospital work for the year. It will also be found to be the most useful and reliable guide to British, American, and Colonial hospitals and asylums, medical schools and colleges, religious and benevolent institutions, dispensaries, nursing and convalescent institutions."

In his preface the author apologises for the too late publication of this most useful year-book, and he somewhat curiously observes that "it shall in future be published without fail in March, 1900, and early in each succeeding year." Brackets to separate the words "in March, 1900,

and," from the rest of the sentence would much improve the grammar.

Unlike many a preface, the one before us contains much valuable food for thought, and is eminently practical as well as suggestive. Sir Henry Burdett states that there is evidence in favour of the view that the principle of payment by patients at all hospitals is gaining in public favour. He entirely agrees in the view that if payment of any kind is taken the medical attendant must receive a fee. He proposes a plan by which this could be equitably done. Sir Henry also strongly insists that the services of a skilled or expert assessor should be requisitioned when it is proposed to build a new hospital or similar institution. In this we are altogether in accord with his views.

This is a volume which should lie on the desk of every hospital secretary, and be consulted by the governing body of every philanthropic institution.

Archives of the Röntgen Ray. Edited by THOMAS MOORE, F.R.C.S., and ERNEST PAYNE, M.A. (Cantab.). Vol. III. No. 4, May, 1899. No. 5, August, 1899. London: The Rebman Publishing Company.

THE numbers of the Archives which lie before us are of the usual high standard. The letterpress is interesting, and the plates are, as a rule, artistic. The radiographs illustrate in a forcible way the diagnostic and also the curative value of the Röntgen ray. The proceedings of the Röntgen Society are, as usual, fully reported, and will be found both interesting and instructive. The work is admirably brought out by the Rebman Publishing Company, 129 Shaftesbury-avenue, London, W.C.

Materia Medica and Therapeutics : An Introduction to the Rational Treatment of Disease. By J. MITCHELL BRUCE, M.D. London: Cassell & Co. 1899.

THIS book, so well known and so thoroughly appreciated, has been brought out by the author, modified in accordance with the changes made in the Pharmacopœia of 1898.

There is no radical alteration from the first edition in

the arrangement of the subjects. In its 609 pages the author has succeeded in making the subject of *Materia Medica* an attractive science.

We recommend the book to students of medicine who are studying for examination, and also to students of medicine who are engaged in the practice of their profession.

A Dictionary of Terms used in Medicine and the Collateral Sciences. By the late RICHARD D. HOBLYN, M.A. Oxon. Thirteenth Edition, revised throughout, with numerous additions by JOHN A. P. PRICE, B.A., M.D. Oxon., late Physician to the Royal Hospital for Children and Women. London: Whittaker & Co. 1899. Post 8vo. Pp. 838.

A WORK which has reached its thirteenth edition leaves little scope for a reviewer's criticism. It has evidently come to stay. Originally compiled by a distinguished Oxford graduate and an able philologist, "Hoblyn's Dictionary" has not lost, but gained, at the hands of the Editor of the present issue.

In his brief preface, Dr. Price points out that the changes in the present edition are mainly those of addition, and he expresses the hope that the selection of several new words and phrases, more particularly those relating to bacteriology, will render the work even more useful than it has been in the past.

A glance through the pages of the book will show how well its information has been kept up to date. Such entries as "Koplik's spots" and "Röntgen rays" are essentially modern, and, by the way, excellent definitions of these additions to medical terminology are given.

There are, of course, some slips—"Putămen," on page 622, should be "Putāmen." "Myosis," "Myoma," on page 485, should more correctly be "Meiosis" or "Miosis" and "Meioma" or "Mioma"—the word being derived from *μείων*, *smaller*—the comparative of *μικρός*, *small*.

We are glad to see the correct quantity of "Angīna" given even as an alternative to the incorrect "Angīna."

"Hoblyn's Dictionary" is, in our opinion, one of the best medical lexicons extant. The published price of the work is half a guinea.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

Transmission of the Agglutinative Substance of the Bacillus of Eberth by the Mother's Milk. A Translation by GEORGE FOY, M.D., F.R.C.S.I.

A PAPER under the above title, by MM. Paul Commont and Coll. appears in the *Lyon Médical*, No. 92, 1899.

After the researches of d'Archard and Bensaude, confirmed by the work of a large number of experimenters, it is admitted that the milk of a woman suffering from typhoid fever acquires the property of agglutinating the bacilli of Eberth. The same property is possessed by cholestrum, as shown by Mr. Mosse (*Société Médicale des Hôpitaux*, 1896). This property of agglutination by the secretion of the mammary gland is constant, though always inferior to that of the blood serum. It is variable in amount, being sometimes very active and at other times very weak.

MM. Mosse and Fränkel reported a short time ago to the *Société Médicale des Hôpitaux* (1899) a case in which the agglutinative power of the milk of a typhoid patient was one in five hundred. A question here occurs. Does the serum of a baby breast-fed by a typhoid patient acquire the property of agglutinating the bacilli of Eberth? This is one of the sides of the question so important in considering the effect of the milk on the tissues of the child, and the part it may play in immunising or predisposing to maladies.

Bensaude, in his thesis (Paris, 1897), expresses the general opinion of his day in the conclusion that the property exists in the milk of the typhoid patient, but not in the blood serum of the suckling baby. This theory he supports by experiments giving negative results with the blood serum.

In 1896, d'Archard and Bensaude reported to the *Société Médicale des Hôpitaux* their observations on a case of a patient who continued to nurse her baby notwithstanding the development of typhoid fever, and, during the first ten or fifteen days of the fever, the milk of this patient agglutinated feebly the bacilli of Eberth,

more feebly than others (in the proportion of one to ten); the serum reaction sought for in the child's blood was not obtainable.

Hiercelin and Lenoble (*Presse Médicale*, 1896), arrived at a similar conclusion. A patient continued to nurse her baby to the twelfth day of her sickness (typhoid fever). The milk of the woman gave a positive agglutinative reaction, though of feeble action (one in six only). As for the serum of the infant's blood, it was not negative in reaction, but four drops of it were required for twelve of the culture.

Widal and Sicard (*Société de Biologie*, 1897), pointed out that in the mouse the property of agglutination is transmitted by suckling. This transmission, on the contrary, does not occur in the guinea-pig or the cat. They were also disappointed in their search for it in the human being.

On these facts being published, Landouzy and Griffon brought before the *Société de Biologie* (November 6th, 1897), the following positive observation:—A suckling child, in perfect health, three months old, breast-fed by the mother, who was suffering from typhoid fever of moderate intensity, to the end of the second week of her sickness, gave agglutinative serum, and the serum of the mother's milk gave a similar reaction.

Castaigne (*Médecine moderne*, November, 1897), publishes two cases—one negative and one positive. In the first the blood serum of the child gave no reaction; it is true that the milk of the mother gave a very feeble reaction in that case, not more than one in twenty. The positive observation of Castaigne is very interesting. The mother had reached the end of the second week of a severe attack of typhoid fever; the baby, who was suckled on this date, agglutinated to one to forty on the same day that it was taken from the breast. The following day the agglutinative power was only one in twenty, and the day following one in ten; on the fourth day the reaction could not be obtained. The infant was now put back to the breast, and the reaction reappeared but feebly, being only one in ten; but the day following it rose to one in fifty.

These observations, all sources of error being eliminated, show the possible transmission of the power of agglutination by feeding, and their variations and the rapidity of their attainment in babes.

Lastly, we have been able to study an analogous case, which we believe to be sufficiently interesting to report. A woman, aged twenty-six years, was admitted to the *Hôtel Dieu*, on the 7th day of July, by M. Bard. This patient had been nursing a baby for two months when she was seized with a feeling of prostration, headache, pain in the small of the back, and shivering. These were followed

by profuse diarrhoea without colic or tenesmus; there was a complete loss of appetite. On examination on admission to hospital there were found tympany, gurgling in the right iliac fossa, well-marked splenic enlargement, the typical rose rash, and some bronchial rales. The temperature ranged from 102° F. to 104° F. It was diagnosticated as a case of typhoid fever of ordinary severity. Well, this patient continued to suckle her baby for the two first weeks of her sickness. We examined the blood serum of the baby for serum reaction. On the 10th of July, three days after the babe was taken from the breast, we obtained the following result:—The blood serum of the mother agglutinated the bacilli of Eberth one in two hundred; the milk of the mother produced the reaction by one in thirty. The blood serum of the baby agglutinated in the proportion of one in ten only. On the 15th of July, that is eight days after the child was taken from the breast, its blood serum had lost all power of agglutination.

In conclusion, positive serum reaction in the suckling child of a typhoid patient is but temporary. This serum reaction bears testimony to the transmission by the milk of a power of agglutination.

We find (1) that the serum of the healthy suckling is deviated only slightly from its normal condition, and to a feeble degree to produce a positive reaction face to face with the bacilli of Eberth. On the other hand we have been unable to detect here any intra-uterine transmission, because of the many difficulties attending the research, the period of intra-uterine life, and the absence of evidence at birth of the mother having had the disease.

Lastly, as to the rapid disappearance of the agglutinative property of the serum of the child—we teach that this itself may be acquired as a temporary property of the serum. We do not think that a typhoid-nursed child will, after it has been weaned and separated from its mother, show evidence of the disease. Its temperature remains normal, there is no diarrhoea, and the illness which sometimes results may be ascribed to change of food.

The case we have reported is a good instance of the transmission from mother to child of the property of agglutination by suckling, and it is a contribution to the cases already given by Landouzy, Griffon, and Castaigne.

In considering the different results obtained by other investigators we must ask ourselves are the conditions the same?

Remarkable, also, is the rapid disappearance of the agglutinative property from the serum of the breast-fed. In Castaigne's positive case the rate of diminution of the property was so great that on the fourth day after weaning the serum gave no reaction. In one

case the serum, three days after weaning the baby, did not give more than a feeble reaction, and in five days the property was wholly gone. It is, however, possible that sometimes the substance which is agglutinative passed by the milk may have a negative reaction, and thus not respond to the test. But leaving out this source of error, it is very certain that the transference is not constant. We intend, therefore, to account for the reasons for believing that the effects are not constant.

We attribute no importance whatever to the chemical condition of the gastric secretion, although Widal and Sicard attach so much importance to its difference in animals.

We admit the existence of gastro-intestinal lesions common to breast-fed children—necessary, according to the experience of d'Archard and Bensaude (*Société Médicale des Hôpitaux*, 1896) to explain the absorption of the agglutinative substance of the milk! We do not think the explanation a good one, for in one case such lesions were not present.

It appears essential to provoke an intensity more or less great (of the fever) to give the agglutinative property to the serum and milk of the mother. Though in our case the milk attained a rate of one in thirty, in the case of Castaigne it reached one in six hundred. On the other hand, in the negative case of d'Archard and Bensaude, it realised no more than one in ten, and even less (one in six) in those of Thiercelin and Lenoble.

Widal and Sicard (*Société de Biologie*, 1897) say, in detailing their negative cases of cats and guinea pigs, that they succeeded by injecting a liquid of high agglutinative power in producing the peculiar property in the serum of those who previously gave no serum reaction. The variability of the strength of the milk in agglutinative power, therefore, may explain the inconstancy of the transmission of this property of the mother or foetus.

According to d'Archard and Bensaude the inconstancy in the transmission of the agglutinative property from the foetus to the mother by the placental circulation is due to the greater intensity of agglutinative conditions required. Mosse and Fränkel, in a recent communication to the *Société Médicale des Hôpitaux de Paris* (1899) concludes, also, that the strength of the property in the mother's serum is one of the conditions for the serum reaction in the foetus; but they consider another condition necessary—that those agglutinative bodies or agglutinogenetic bodies should be carried by the mother's blood freely to the placenta during a sufficient time.

For the transmission to the babe of the agglutinative property

the blood of the mother has to pass two barriers. There is, first, the filter of the mammary gland, which explains that the milk of the mother has not always the same proportional amount of agglutinative power as her blood. Then follows the epithelium of the digestive tract of the child, the second barrier which the substance has to pass ; in some cases it has here been destroyed—not transmitted. Then there are so many other substances, probably of the same order (divers toxins and antitoxins), which are arrested at this point. At each barrier some portion of the agglutinative substance appears to be arrested ; this may explain why each of the three fluids under consideration—the blood of the mother, the mother's milk, and the blood of the suckling—possess an agglutinative power of relatively less proportionate activity, which in our case was as follows :—

Serum of the mother's blood	...	1	in	200
Serum of the mother's milk	...	1	„	30
Serum of the child's blood	...	1	„	10

These facts make it clear that it is possible to transmit to the blood of the child certain of the properties of the blood of the nurse, and that they pass the barrier of the digestive epithelium. To effect this, two factors are requisite—The necessary strength of the property to be transmitted, and a sufficient duration of the period of transmission. This acquired property is always a temporary one, and disappears a few days after the cessation of the supply.

FATAL OBSTRUCTION FROM THE MURPHY BUTTON.

TIEBER (*Wien. klin. Woch.*, Oct. 6) reports a fatal case of obstruction of the lumen of the Murphy button by a plum stone, and comments on several other cases in which the button became blocked with hard fæcal lumps. He concludes that the use of the button should always be preceded by washing out the stomach and evacuating the intestines to remove foreign bodies, and that liquid food should afterwards be given for some considerable time.

POISONING FROM A CARBOLIC DRESSING OF THE UMBILICAL CORD.

M. COSTÉ (*Gazette des Hôpitaux*, Nov. 5, p. 1167).—A dressing of glycerine and carbolic acid applied to the umbilical cord of a newborn child soon provoked symptoms of poisoning, to which it succumbed. A dressing of glycerine strongly coloured with methylene blue applied to the umbilical cords of lambs produced greenish discoloration of the urine.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—EDWARD H. BENNETT, M.D., F.R.C.S.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF PATHOLOGY.

President—J. M. PURSER, M.D.

Sectional Secretary—E. J. McWEENEY, M.D.

Friday, May 5, 1899.

The PRESIDENT in the Chair.

Pathological Clavicles.

DR. KNOTT exhibited a large series of pathological clavicles.

PROF. E. H. BENNETT said that the two specimens of fracture of the sternal end of the clavicle were very rare. They were of exactly the same type as he had himself obtained, namely, that the fracture was oblique, passing through the sternal end and produced by a force acting in the axis of the clavicle. The anatomical varieties of the clavicles shown conformed to the great varieties of shoulders. He had never seen an epiphysis on the outer end of the clavicle.

MR. R. C. B. MAUNSELL asked Dr. Knott if he had ever seen an example of ununited fracture of the clavicle. He had a patient who sustained a fracture of the clavicle, and a false joint was the result, owing to non-union.

DR. KNOTT, in reply, said that he had never seen an ununited fracture of the clavicle.

Another Case of Infective Endocarditis, due to the Pneumococcus.

THE SECRETARY (Professor E. J. McWeeney, M.D.), described a case of this disease. Into the left auricle projected a greyish friable mass of fibrinous material as big as a large hazel nut, and springing from the aortic cusp of the mitral. The chordæ tendineæ were involved in a mass of similar character, and were much softened and ulcerated. Microscopically and culturally the diplococcus of Fraenkel was the only organism found. The edges of the fibrinous mass contained it in prodigious numbers, aggregated in small circular colonies. Both kidneys were found extensively infarcted, but not the spleen.

Two months previously the patient had developed a slight consolidation of both bases, consequent on a laparotomy successfully performed for the relief of pyloric obstruction by Mr. Chance. The temperature had been elevated at that time for two days only, and the case was regarded as one of so-called "ether pneumonia." She was discharged cured of her gastric troubles, and re-admitted a month afterwards with the symptoms of ulcerative endocarditis. Exhibitor desired to draw attention to the facts (1) that cases of so-called ether pneumonia may be due to pneumococcus infection, and (2) that pneumococcus infection of the lungs spreads more often than is generally supposed to the general circulation, giving rise to ulcerative endocarditis. This was the second case of the kind he had shown within the last five months to that section. In the previous case the heart affection had supervened on the pneumonia nine days after an imperfect crisis, and the blood withdrawn during life was proved culturally to contain the pneumococcus, whilst abundant colonies were obtained *post-mortem* from the clot in the right auricle. Illustrative slides and cultures were shown.

Dislocations of the Metatarsus on the Tarsus.

PROFESSOR BENNETT submitted the accounts of two cases of dislocation of the metatarsus on the tarsus which he had met with. One the complete dislocation of the bases of the metatarsals upwards and outwards; the second an example of dislocation of the first, second, and third metatarsals downwards beneath the tarsus. Of this he showed a cast, and of the former the skiagraph, showing that the dislocation had occurred without fracture of the base of the second metatarsal. Having stated the facts of the cases, he briefly reviewed the literature of the subject and described the method of treatment of his cases.

DR. KNOTT had seen one of Dr. Bennett's cases. In Dr. R. Smith's cases the five metatarsal bones were displaced upwards and backwards *en masse* on the tarsus, and the first metatarsal bone was accompanied by a piece of the internal cuneiform bone. The deformity was similar in each case. In Professor Bennett's case he thought that the displacement became more exaggerated, as it travelled from the inside to the outside, that the first metatarsal was least displaced, and also that the bones were somewhat "scattered." There was no over-riding which would cause foreshortening of the foot, nor was the displacement upwards quite complete.

Central Sarcoma of Bone.

MR. W. I. DE COURCY WHEELER read a paper on this subject.

DR. E. J. McWEENY said that the two microscopical sections which he had prepared for Mr. Wheeler showed an enormous number of giant cells or myeloplaxes. The tissue resembled normal bone marrow, with an extreme multiplication of the myeloplaxes. The cells were of positively gigantic proportions, and some possessed about a hundred nuclei. The nuclei of many of the smaller round cells showed the mitotic figures, but there was no evidence of the mitosis in the nuclei of the myeloplaxes. Concerning the origin of the myeloplaxes, Schäfer's picture represented the nuclei lobulated as though undergoing direct division, but he (Dr. McWeeney) thought this very improbable. Mr. Wheeler's suggestion that such tumours should be removed out of the class of sarcoma and called myelomata was impossible, because the term myeloma was already appropriated to a kind of tumour which is not identical with Mr. Wheeler's. Weichselbaum's book described myeloma as a variety of small round-celled tumours growing from the marrow of bones, but not reproducing the giant-celled structure of marrow. It was multiple, and originated either from skull bones or the bones of the vertebral column, occurring in elderly people, and was often associated with blood abnormality, so that Weichselbaum looked upon it as a part of leukæmia or pseudo-leukæmia rather than a distinct tumour. Regarding the tissue from which they originate, Mr. Bland Sutton laid stress on the fact that periosteal sarcoma never contains giant cells. Mr. Jackson Clarke states that some periosteal sarcomata have a giant-cell character, and this was also the speaker's opinion, based on experience of a good many such growths. As for the proposition of removing such tumours out of the sarcomata, he thought it impossible, for the simple reason that there was an unbroken chain of intermediate links between a round or spindle-celled sarcoma, with a very few giant cells, on the one hand, and a sarcoma crowded with such cells on the other hand. In Mr. Wheeler's specimen there was no tendency whatever to the formation of spicula of bone often characteristically formed in myeloid sarcomata.

THE PRESIDENT said that in the marrow of normal bones the cells resembling the myeloplaxes are most commonly met with in young bones, and are very rare in the marrow of adult animals. Large cells were exceedingly common, but had not multiple nuclei, but generally one nucleus of very irregular shape, and extremely lobed and bossy, many of the lobes often connected together by small threads or processes, but they were not nuclei dividing. He thought that the pathological myeloplaxes were

something different from the normal giant cells of the marrow, which he looked on as osteoclasts. These cells showed multiple nuclei, and very rarely karyokinetic figures. How the nuclei divided in giant-celled sarcomata he did not know. He lately saw a tumour which grew from a goat's jaw which proved to be a fibrous sarcoma, in which there were enormous numbers of giant cells often arranged around bone undergoing absorption, while in other places the bone had entirely disappeared, and there was nothing but giant cells.

MR. WHEELER, in reply, said there were no bony growths thrown out in the tumour. He would like to know if material like that occurring in the tumour shown by him was taken out of a similar case, could it be possible, seeing that there was so much spindle-celled element, to say positively that it was not a spindle-celled sarcoma, but a myeloid sarcoma.

Two Vascular Tumours of Abdominal Wall.

MR. R. CHARLES B. MAUNSELL showed two specimens which had been successfully removed by operation. The first was removed from the left lumbar region of a young lady aged 22, and had been gradually growing from early childhood. It was as large as an adult hand, and on examination proved to be formed of dilated lymphatic spaces, and of the same character as the congenital cystic hygromata of the neck.

The second was removed from a baby 11 months old, and proved to be a venous naevus. It had been noticed shortly after birth when it was not bigger than the head of a pin, and had rapidly grown until at operation it measured $16\frac{1}{2} \times 11\frac{1}{2}$ cms., and covered fully a third of the baby's abdomen. It was ulcerated and constantly oozing blood. Mr. Maunsell removed it *en masse*, very little blood being lost during the operation, the patient making an uninterrupted recovery notwithstanding its tender age.

Pathological Conditions of the Tunica Vaginalis Testis.

MR. FAGAN, F.R.C.S.I., showed the following specimens:—

1. A large hydrocele opened longitudinally showing the relation of the tunica vaginalis to the testis, and demonstrating the several coverings of the tunica vaginalis, all of which were clearly shown by dissection. The external spermatic and transversalis fasciæ were thin, the cremasteric fascia was thick and strong, and the tunica vaginalis was thick.

2. A hydrocele associated with syphilitic disease of the testis. The tumour was removed for pain from a man aged 50 who had

syphilis 17 years previously. The testis felt stony hard; the tunica vaginalis was moderately distended, pain constant and unbearable.

3. A large hydrocele due to malignant papillary neoplasm of the tunica vaginalis. Growth began first in the summer of 1898. Hydrocele was tapped twice; filled very rapidly after last tapping, and lost its translucency. Scrotum became purplish and was covered with distended veins. No history of injury, syphilis, or gonorrhœa; patient in 66th year and healthy, not even suffering pain from tumour. When tumour was opened a large quantity of yellowish black fluid poured out, and the papillary growth became apparent. Castration was performed April 12th, 1899. Patient left hospital April 22nd.

The microscopic characters were described by Professor McWeeney, who pointed out how very interesting it was to see a typical papillomatous carcinoma originating from an endothelial membrane like the *tunica vaginalis*. The shape and appearance of the cells were almost identical with those composing a villous papilloma of the urinary bladder.

THE PRESIDENT said that the specimen referred to by Dr. McWeeney was interesting, because the epithelium covering the sexual glands is, in the early stage, columnar in shape, and several layers thick, and grows down to form the tubes of the ovary and the tubes of the testicle, so that the specimen might be a recurrence to the primitive type.

The Section then adjourned.

DISLOCATION OF BOTH HIPs.

MAUCLAIRE AND PREVOST (*Gaz. des Hôpitaux*, October 29, 1898, p. 1144). A lighterman seeing another boat about to collide with his, endeavoured to push it back with his extended legs, and was thrown backwards. He sustained symmetrical iliac dislocations of the hips.

ROYAL ARMY MEDICAL CORPS.

THE Director-General of the Army Medical Service has forwarded for publication the following list of successful candidates for commissions in the Royal Army Medical Corps at the examination held in London in July and August, 1899:—

	Marks		Marks
1 Harrison, L. W.	2,875	8 Harvey, F.	2,102
2 Irwine, F. S.	2,284	9 Trimble, C. E.	2,086
3 Morton, H. M.	2,260	10 Matthews, J.	2,084
4 Babington, M. H.	2,231	11 McLoughlin, W. M.	1,940
5 Richards, F. G.	2,150	12 Siberry, E. W.	1,816
6 Knox, E. B.	2,121	13 Wingate, B. F.	1,805
7 Roch, H. T.	2,115	14 O'Reilly, P. S.	1,800

MEDICAL EDUCATION AND EXAMINATIONS IN IRELAND.

1899-1900.

MEDICAL students in Ireland, as elsewhere, have in the first instance to choose between University Degrees and Non-University Qualifications or Diplomas. Should they elect to try for an University Degree, their choice must lie between the University of Dublin, which requires a Degree in Arts before registrable Degrees in Medicine, Surgery, and Midwifery are conferred, and the Royal University of Ireland, which—while not requiring a full Arts Degree—yet rightly insists on a liberal education in Arts, tested by more than one searching examination in the same, before a candidate graduates in the three branches of medicine already mentioned—Medicine, Surgery, and Midwifery.

Outside the Universities, the chief Licensing Bodies are the Royal Colleges of Physicians and Surgeons. The Conjoint Examination Scheme between the Royal College of Surgeons in Ireland and the Apothecaries' Hall of Dublin has ceased to exist. The position of the latter body as a Licensing Corporation under the Medical Act of 1886 has been defined by the appointment of Examiners in Surgery by the General Medical Council at the bidding of Her Majesty's Privy Council. The Royal Colleges are in a position to give a first-class working qualification in Medicine, Surgery, and Midwifery—a qualification which is registrable under the Medical Acts, which is universally recognised as one of high merit, and the possession of which is attended by no disabilities, such as preventing its possessor from dispensing medicines or keeping open shop for the sale of medicines if he is legally qualified to do so.

The Medical Schools in Ireland are—(1.) The School of Physic in Ireland, Trinity College, Dublin; (2.) The Schools of Surgery of the Royal College of Surgeons in Ireland (including the Carmichael College of Medicine and the Ledwich School of Medicine); (3.) The Catholic University Medical School, Cecilia-street, Dublin; (4.) The School of

Medicine, Queen's College, Belfast; (5.) The School of Medicine, Queen's College, Cork; and (6.) The School of Medicine, Queen's College, Galway.

Facilities for Clinical Instruction in fully-equipped Medico-Chirurgical Hospitals exist in Dublin, Belfast, Cork, and Galway; but, as a rule, the Schools of Medicine in Ireland are not attached to a given hospital, or *vice versâ*, as is the case in London and other large centres of medical education. The student will, however, have little difficulty in selecting a hospital in the wards of which he will receive excellent bedside teaching, and have ample opportunity of making himself familiar with the aspect and treatment of disease.

The detailed information which follows is authentic, being taken directly from the published calendars of the respective licensing bodies.

REGULATIONS PRESCRIBED BY THE GENERAL MEDICAL COUNCIL.

With regard to the course of Study and Examinations which persons desirous of qualifying for the Medical Profession shall go through in order that they may become possessed of the requisite knowledge and skill for the efficient practice of the Profession, the General Medical Council have resolved that the following conditions ought to be enforced without exception on *all* who commence their Medical Studies at any time after Jan. 1, 1892:—

(a.) With the exception provided below, the period of Professional Studies, between the date of registration as a medical student and the date of Final Examination for any Diploma which entitles its bearer to be registered under the *Medical Acts*, must be a period of *bonâ fide* study during not less than five years.

(b.) In every course of Professional study and Examinations, the following subjects must be contained:—

- (I.) Physics, including the Elementary Mechanics of Solids and Fluids, and the rudiments of Heat, Light, and Electricity.
- (II.) Chemistry, including the principles of the Science, and the details which bear on the study of Medicine.
- (III.) Elementary Biology.
- (IV.) Anatomy.
- (V.) Physiology.
- (VI.) Materia Medica and Pharmacy.
- (VII.) Pathology.
- (VIII.) Therapeutics.

(IX.) Medicine, including Medical Anatomy and Clinical Medicine.

(X.) Surgery, including Surgical Anatomy and Clinical Surgery.

(XI.) Midwifery, including Diseases peculiar to Women and New-born Children.

(XII.) Theory and Practice of Vaccination.

(XIII.) Forensic Medicine.

(XIV.) Hygiene.

(XV.) Mental Disease.

The first four of the five years of Medical Study should be passed at a School or Schools of Medicine recognised by any of the Licensing Bodies, provided that the First Year may be passed at a University, or Teaching Institution recognised by any of the Licensing Bodies, where the subjects of Physics, Chemistry, and Biology are taught.

A student who has, previous to registration, attended a course or courses of study in one or all of the subjects, Physics, Chemistry, or Biology, in any University, School of Medicine, or Teaching Institution recognised by any of the Licensing Bodies, may without further attendance be admitted to examination in these subjects: provided always that such course or courses shall not be held to constitute any part of the five years' course of professional study.

The exception referred to above in (a) is as follows:—

Graduates in Arts or Science of any University recognised by the General Medical Council who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an Examination in these subjects for the Degrees in question, are held to have completed the first of the five years of Medical Study.

The Examinations in the Elements of Physics, Chemistry, and Biology should be passed before the beginning of the Second Winter Session.

I.

UNIVERSITY OF DUBLIN.

DEGREES AND DIPLOMAS IN MEDICINE, SURGERY, AND MIDWIFERY.

The Degrees and Diplomas in Medicine, Surgery, and Midwifery granted by the University are as follows:—

The Degrees are:—

1. Bachelor in Medicine.
2. Bachelor in Surgery.
3. Bachelor in Obstetric Science.
4. Doctor in Medicine.
5. Master in Surgery.
6. Master in Obstetric Science.

The Diplomas are:—

1. Diploma in Medicine.
2. Diploma in Surgery.
3. Diploma in Obstetric Science.

Besides these Degrees and Diplomas, the University also grants a—

Qualification in Public Health or State Medicine.

REGULATIONS FOR STUDENTS WHO MATRICULATED ON OR BEFORE 25TH NOVEMBER, 1891.

As the number of students who matriculated before November, 1891, is now small, it seems unnecessary to print in full the conditions which must be fulfilled in order that such candidates should qualify for the Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.). The Registrar of the School of Physic in Ireland will supply all information on application to him.

REGULATIONS FOR STUDENTS WHO MATRICULATED SINCE 1891.

The following conditions must be fulfilled in order to qualify for the Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.):—

I. The Student must be of B.A. standing, and his name must be for at least five (Academic) years on the Books of the Medical School, reckoned from the date of his Matriculation. He may carry on his Arts Course concurrently with his Medical Course, and he need not have taken his B.A. before presenting himself for his Final Medical Examination, but he cannot have the Medical Degrees conferred without the Arts Degree.

II. The following Courses must have been attended:—

[NOTE.—The Courses marked thus (*) must have been taken out before the Student can present himself for any part of the Final Examination. In addition, the Courses marked thus (+) must have been taken out before he can present himself for Section B; the Courses marked thus (†) before he can present himself for Section C; and the Courses marked thus (§) before he can present himself for Sections D and E:]

1. LECTURES.

WINTER COURSES.

* <i>Systematic Anatomy.</i>	* <i>Chemistry.</i>
* <i>Practical Anatomy (with Dissections), 1st year.</i>	† <i>Surgery.</i>
* <i>Practical Anatomy (with Dissections), 2nd year.</i>	* <i>Physiology (two Courses).</i>
* <i>Applied Anatomy (with Dissections).</i>	† <i>Practice of Medicine.</i>
	† <i>Midwifery.</i>
	† <i>Pathology.</i>

SUMMER COURSES.

**Practical Chemistry.*
 **Practical Histology.*
 **Botany.*
 **Zoology.*

**Materia Medica and Therapeutics.*
 †*Medical Jurisprudence and Hygiene.*
 §*Operative Surgery.*

TERM COURSES.

**Physics.*—Michaelmas, Hilary, and Trinity Terms.

§2. HOSPITAL ATTENDANCE.

1. Three Courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other Metropolitan Hospital recognised by the Board of Trinity College.

Students who shall have diligently attended the practice of a recognised London or Edinburgh Hospital for one year, of a recognised County Infirmary, or of a recognised Colonial Hospital, for two years previous to the commencement of their Metropolitan Medical Studies, may be allowed, on special application to the Board of Trinity College, to count the period so spent as equivalent to one year spent in a recognised Metropolitan Hospital.

§3. PRACTICAL VACCINATION.

One month's instruction in Practical Vaccination to be attended at the Vaccine Department, Local Government Board for Ireland, 45 Upper Sackville-street; at No. 1 East Dispensary, 11 Emerald-street; or, until further notice, at the Grand Canal-street Dispensary.

§4. MENTAL DISEASE.

A Certificate of attendance on a three months' Course of Practical Study of Mental Disease in a recognised Institution.

†5. PRACTICAL MIDWIFERY.

A Certificate of attendance on a six months' Course of Practical Midwifery with Clinical Lectures, including not less than thirty cases.

§6. OPHTHALMIC SURGERY.

A Certificate of attendance on a three months' Course of Ophthalmic Surgery.

III. The following Examinations must be passed:—

The Previous Medical or Half M.B. Examination.

The Final Examination.

The Previous Medical Examination must be passed in all its

parts before any part of the Final can be entered for, except in the case of Candidates for Diplomas.

A.—PREVIOUS MEDICAL EXAMINATION.

This Examination is divided into—

1. Physics and Chemistry.
2. Botany and Zoology.
3. Anatomy and Institutes of Medicine (Practical Histology and Physiology).

The Examination in Anatomy includes examination on the dead subject.

Before presenting himself for examination in any of the subjects the Student must have obtained credit for the corresponding Courses of Lectures and Practical Instruction.

The Final Examination is arranged as follows:—

FIRST PART.

SECTION A.

Applied Anatomy (Medical and Surgical), paper.

Applied Physiology, *vivâ voce*.

Materia Medica and Therapeutics, paper and *vivâ voce*.

SECTION B.

Medical Jurisprudence and Hygiene, paper and *vivâ voce*.

Medicine, paper and *vivâ voce*.

Surgery, paper and *vivâ voce*.

Pathology, paper and *vivâ voce*.

Section A may be passed in any part of the Fourth Year, provided the corresponding Curriculum shall have been completed; Section B not before Trinity Term of the Fourth Year.

Section A must be passed before the Candidate can present himself for Examination in Section B. Both Sections must be passed at least one Term before the Candidate can present himself for Examination in Sections C, D, or E.

Fee for the *Liceat ad Examinandum* £5, to be paid when the Candidate enters for Section A.

SECOND PART.

SECTION C.

Midwifery, paper and *vivâ voce*.

Gynæcology, paper and *vivâ voce*.

Obstetrical Anatomy, paper.

SECTION D.

Clinical Medicine.

Mental Disease.

SECTION E.

Clinical Surgery.

Operations.

Ophthalmic Surgery.

One Section of the Second Part must be passed in Trinity Term of the Fifth Year, or subsequently. The other two may be passed in any Term of the Fifth Year, provided the corresponding Curriculum shall have been completed. Subject to this provision the Sections may be taken in any order.

Fee for the *Liceat ad Examinandum* £5, to be paid when the Candidate enters for the Section for which he first presents himself.

UNIVERSITY DIPLOMAS.

Candidates for the Diplomas in Medicine, Surgery, and Obstetric Science must be matriculated in Medicine, and must have completed two years in Arts, and five years in Medical Studies.

The dates, regulations, and subjects of Examination are the same as for the Final Examination, except that it is not necessary to attend the Courses of Lectures in Botany and Zoology, nor to pass the Previous Medical Examination in these subjects.

A Diplomate on completing his Course in Arts, and proceeding to the Degree of B.A. may become a Bachelor, by attending the Lectures on Botany and Zoology, passing the Previous Medical Examination in those subjects, and paying the Degree Fees.

The *Liceat* fees are the same as for the Degrees.

Each Candidate who has completed the prescribed Courses of study and passed all the Examinations will be entitled, if a Graduate in Arts, to have conferred on him the Degrees of M.B., B.Ch., B.A.O., on payment to the Senior Proctor of the Degree Fees amounting to £17. A corresponding regulation applies to the Diplomas, the Fees for which are £11. He will also obtain from the Senior Proctor a Diploma, entitling him to be entered on the Register of Medical Practitioners under the Medical Act, 1886.

QUALIFICATION IN PUBLIC HEALTH OR STATE MEDICINE.

The Diploma in Public Health is conferred, after examination, by the University of Dublin, upon Candidates fulfilling the following conditions:—

1. The Candidate must be a Doctor in Medicine, or Graduate in Medicine and Surgery, of Dublin, Oxford, or Cambridge.

2. The name of the Candidate must have been on the Medical Register at least twelve months before the Examination.

3. The Candidate must have completed, subsequent to Registration, six months in a Laboratory, recognised by the Provost and Senior Fellows, in practical instruction in Chemistry and Bacteriology applied to Public Health, and also have attended, practically, outdoor Sanitary work for six months, under an approved Officer of Health.*

The Examination for 1899 will begin on December 11th.

II.

ROYAL UNIVERSITY OF IRELAND.

COURSES FOR DEGREES IN MEDICINE, SURGERY, AND OBSTETRICS.

General Regulations.

The Course for these Degrees shall be of at least five Medical years' duration; but Graduates in Arts or Science who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an Examination in these subjects for the Degrees in question, shall be held to have completed the first of the five years of Medical Study.

Students who commenced their Medical Studies after Jan. 1, 1892, must furnish evidence of having been registered by the Medical Council, as Students in Medicine, for at least 57 months, before being admitted to the M.B., B.Ch., and B.A.O. Degrees Examination.

No one can be admitted to a Degree in Medicine who is not twenty-one years of age.

All Candidates for these Degrees, in addition to attending the lectures and complying with the other conditions to be from time to time prescribed, must pass the following Examinations:—

The Matriculation Examination.

The First University Examination.

The First Examination in Medicine.

The Second Examination in Medicine.

The Third Examination in Medicine.

The Examination for the M.B., B.Ch., B.A.O. Degrees

The Course of Medical Studies shall be divided into five Periods of one Medical Year each.

Candidates shall furnish proper Certificates of attendance at the several Courses of Medical Instruction prescribed for the different years of the curriculum.

* This condition does not apply to Practitioners registered, or entitled to be registered, on or before 1st January, 1890.

No such certificate will be received unless it attests a *bond fide* attendance at three-fourths of the whole Course. *Students are reminded that certificates of attendance at Night Lectures will not be accepted.*

No Certificates of instruction in any of the Courses of Medical Studies, in connection with either Lectures or Hospitals, can be received, unless issued by an Institution which has been formally recognised by the Senate.

The prescribed courses in Natural Philosophy, Chemistry, Biology, Anatomy and Physiology must be attended in Institutions provided with the appliances required for the performance by the Students of proper Experimental Courses and Practical Work in those subjects.

Where Certificates in a special department (Fever, Mental Diseases, Ophthalmology, &c.) are presented, they must be signed by the Physician or Surgeon in charge of such department.

THE EXAMINATION FOR THE M.B., B.CH., B.A.O. DEGREES.

Candidates may present themselves for this Examination after an interval of such period, not being less than one Medical Year from the time of passing the Third Examination in Medicine, as the Senate may from time to time prescribe, provided they shall have completed the entire Medical Curriculum.

Printed forms of application for admission to this Examination may be had from "the Secretaries, the Royal University of Ireland, Dublin."

This Examination consists of three parts:—

(a.) Medicine, Theoretical and Clinical, including Therapeutics, Mental Diseases, Medical Jurisprudence, Sanitary Science, and Medical Pathology.

(b.) Surgery, Theoretical, Clinical, and Operative, including the use of Instruments and appliances; Surgical Anatomy; Ophthalmology and Otology,* Surgical Pathology.

(c.) Midwifery and Diseases of Women and Children.

All Candidates must enter for and go through the entire Examination, but a Candidate may be adjudged to have passed in any of the foregoing parts in which he satisfies the Examiners.

Upon completing satisfactorily his Examination in all three

* Candidates at this Examination must exhibit reasonable proficiency in the use of the Ophthalmoscope and Laryngoscope.

divisions, the Candidate will receive, in addition to the parchment Diplomas recording his admission to the M.B., B.Ch., B.A.O. Degrees, a Certificate of having passed a Qualifying Examination in the subjects of Medicine, Surgery, and Midwifery.

The fee for this Certificate is *Ten Pounds*, which must be paid before admission to these Degrees.

DIPLOMA IN SANITARY SCIENCE.

This Diploma is conferred only on Graduates in Medicine of the University.

Candidates may present themselves for this Examination after an interval of twelve months from the time of obtaining the M.B., B.Ch., B.A.O. Degrees.

Printed forms of application for admission to this Examination may be had from "the Secretaries, the Royal University of Ireland, Dublin."

Every Candidate must, when entering for the Examination, produce:—^a

- (a.) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, attended during a period of six months Practical Instruction in a Laboratory approved by the University. The nature of this course is fully indicated by the detailed Syllabus of the Examinations in Physics, Climatology, Chemistry, Microscopy, Bacteriology, &c.
- (b.) A Certificate of having, *after obtaining the M.B., B.Ch., B.A.O. Degrees*, for six months practically studied the duties of out-door Sanitary work under the Medical Officer of Health of a County or large Urban District.

The Subjects of this Examination are:—

Physics ;
Climatology ;
Chemistry ;
Microscopy ;
Bacteriology ;
Geology ;
Sanitary Engineering ;
Hygiene, Sanitary Law, and Vital Statistics.

The Candidate must draw up reports on the Sanitary condition of Dwelling Houses, or other buildings selected for the purpose.

^a These rules (a), (b), shall not apply to Medical Practitioners registered or entitled to be registered on or before Jan. 1, 1890.

N.B.—Proficiency in practical work and an adequate acquaintance with the instruments and methods of research which may be employed for Hygienic investigations are indispensable conditions of passing the Examination.

DIPLOMA IN MENTAL DISEASES.

This Diploma is conferred only on Graduates in Medicine of the University.

Printed forms of application for admission to this Examination may be had from "the Secretaries, the Royal University of Ireland, Dublin."

The subjects for this Examination are those prescribed for the Hutchinson Stewart Scholarship for proficiency in the treatment of Mental Disease.

BELFAST.

QUEEN'S COLLEGE.

Clinical instruction is given at the Belfast Royal Hospital. The Ulster Hospital for Diseases of Women and Children, the Belfast Maternity Hospital, the Belfast Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, the Belfast District Lunatic Asylum, and the Belfast Hospital for Sick Children are open to students.

A pamphlet containing full information can be had free on application to the Registrar, Queen's College, Belfast.

CORK.

QUEEN'S COLLEGE.

Clinical instruction is given at the North and South Infirmaries (each 100 beds). Students also can attend the Mercy Hospital (60 beds), the Cork Union Hospital, the County and City of Cork Lying-in-Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session at Queen's College extends from October to April inclusive (twenty-seven weeks), but the hospitals are open to students in May, June, and July also, and arrangements have been made for the delivery of some of the three months' Courses of lectures during the months of April, May and June.

GALWAY.

QUEEN'S COLLEGE.

Clinical instruction is given at the Galway County Infirmary and the Galway Town Hospital.

Prizes.—Attached are eight scholarships of the value of £25 each. The Council may award Exhibitions to matriculated students at the examinations for junior scholarship. All scholarships and exhibitions of the second, third, and fourth years may be competed for by students who have attained the requisite standing in any medical school recognised by the College Council, and have passed the Matriculation Examination in the College, or in the Royal University of Ireland.

III.

**ROYAL COLLEGES OF PHYSICIANS AND SURGEONS,
IRELAND.**

**OUTLINE MEDICAL COURSE APPLICABLE TO CANDIDATES
FOR THE LICENCES OF THE ROYAL COLLEGES.**

*These Regulations apply to Candidates commencing Medical Study
after 1st January, 1892.*

1. Enter for and pass a Preliminary Examination recognised by the General Medical Council.

2. Register as a Medical Student on a form obtainable at the Royal College of Surgeons from the Registrar.

3. Enter for and attend Courses for the First Professional Ex- amination.	Winter six months	{ Dissections	... £5	5
		{ Chemistry	... 3	3
		{ Physics	... 3	3
	Summer three months	{ Practical Chemistry	5	5
		{ Pharmacy	... 3	3
		{ Biology	... 3	3
			<hr/>	
			£23	2

4. Enter for and pass the First Professional Examination.

SUBJECTS OF EXAMINATION.

Fee, £15 15s. (Matriculated Pupils, R.C.S., £10 10s. See note, page 304).	1. (a) CHEMISTRY; (b) PHYSICS.
	2. PRACTICAL PHARMACY.
	3. ELEMENTARY BIOLOGY.
	4. ANATOMY, viz.—Bones, with attachments of muscles and ligaments—Joints.

Candidates may take this Examination as a whole at one time, or in four parts, but no portion earlier than the end of the first Winter Session.

5. Enter for and attend Courses for the Second Professional Examination.	Winter six months	{	Hospital (9 months)	£12	12
			Anatomy	...	3 3
			Dissections	...	5 5
	Summer three months	{	Physiology	...	3 3
			Histology	...	5 5
			Materia Medica	...	3 3
				<hr/>	£32 11


Materia Medica may be deferred to the Third Year.

6. Enter for and pass the Second Professional Examination.

SUBJECTS OF EXAMINATION.

Fee, £10 10s.	{	1. ANATOMY.—The Anatomy of the whole Human Body.	} if not deferred.
		2. HISTOLOGY.	
		3. HUMAN PHYSIOLOGY	
		4. MATERIA MEDICA	

The Candidate must present himself at least in Anatomy and Histology; if he pass in either of these subjects, he may, at the discretion of the Examiners, get credit therefor. Physiology and Materia Medica may, at the option of the Candidate, be postponed to Examinations held during the third year.

 The Lectures on Physiology must be attended before admission to *any part* of the Second Professional Examination.

7. Enter for and attend Courses for the Third Professional Examination.	Winter six months	Hospital (18 months ^a)	£25	4
		Dissections	...	5 5
		Medicine	...	3 3
		Surgery	...	3 3
		Midwifery	...	3 3
	Summer three months	Pathology	...	3 3
		Operative Surgery	...	5 5
		Public Health and Forensic Medicine	3	3
				£51 9

8. Enter for and pass the Third Professional Examination.^b

SUBJECTS OF EXAMINATION.

Fee, £9 9s.	{	1. MEDICINE.	}
		2. SURGERY.	
		3. PATHOLOGY.	
		4. THERAPEUTICS.	
		5. PUBLIC HEALTH AND FORENSIC MEDICINE.	

^a In addition to that attended in the Second Year, with evidence of attendance in Fever Wards.

^b This examination cannot be taken earlier than the end of the Fourth Winter Session.

A Candidate must present himself, in the first instance at least, in Medicine, Surgery, Therapeutics, and Pathology. Should he pass in any of these he may, at the discretion of the Examiners, get credit therefor. Public Health and Forensic Medicine may be postponed.

9. Enter for and attend Courses for the Final Examination.	{	Maternity Hospital, ^c £6 6s.,		
		£8 8s., or	...	£10 10
		Ophthalmic Certificate	...	3 3
		Vaccination ^a	...	1 1
		Clinical Instruction in Mental Diseases ^a	...	3 3
			<hr/>	<hr/>
			£17	17

10. Enter for and pass the Final Examination.

SUBJECTS OF EXAMINATION.

Fee, £6 6s.	{	1. MEDICINE, including MEDICAL ANATOMY and MENTAL DISEASES.
		2. SURGERY, including OPERATIVE SURGERY, SURGICAL ANATOMY, OPHTHALMIC and AURAL SURGERY.
		3. MIDWIFERY, including DISEASES OF WOMEN and NEW-BORN CHILDREN, and the THEORY and PRACTICE OF VACCINATION.

Every Candidate must produce evidence that he has acted as Medical Clinical Clerk for three months, and as Surgical Dresser for three months.

Candidates are not admissible to the Final Examination earlier than the end of the Fifth Year of Medical Study.

Candidates may enter for and pass separately in Medicine, Surgery, and Midwifery.

Colonial Candidates who have taken out a portion of the Course, or have passed Examinations in Australia and elsewhere, have been accorded certain exemptions, which may be learned on application to the Secretary of the Committee of Management.

We are indebted to *The Lancet*, Sept. 2, 1899, for the following Table, which we have revised and corrected in some minor points:—

^a May be taken in the Fourth Year.

Tabular List of the Classes, Lecturers, and Fees

LECTURES, &c.	DUBLIN UNIVERSITY	DUBLIN. R. C. OF SURGEONS		DUBLIN. CATHOLIC UNIV.
	Lecturers	Lecturers	Fees	Lecturers
Histology and Physiology	..	Prof. Scott	Course, £3 3s., in all Classes, ex. Deser. Anat. (£5 5s.), Oper. Surg. (£5 5s.), Pract. Chem. (£5 5s.), Pract. Histology (£5 5s.)	Dr. Coppinger and Dr. Coffey [†] Dr. Birmingham
Anatomy, Descriptive and Surgical	Dr. Cunningham	Prof. Fraser		
Practical Anatomy and Dissections	Dr. Cunningham	Prof. Fraser		Dr. Birmingham, assisted by Drs. Fagan and Dempsey
Chemistry - - -	Dr. Reynolds	Profs. Sir C. Cameron and Lapper		Dr. Campbell, assisted by Dr. Frazer
Practical Chemistry	Dr. Reynolds			
Materia Medica and Pharmacy	Dr. W. G. Smith	Prof. Sir G. F. Duffey		Dr. Quinlan [*]
Botany and Zoology -	Dr. Wright Prof. Mackintosh	Profs. Minchin and Congrave [‡]		Dr. Sigerson [†] and Dr. Blaney
Institutes of Medicine and Pathology	Dr. Purser	Prof. A. H. White		Dr. McWenney
Natural Philosophy -	..	..		Prof. Stewart [†]
Hospital Practice -	Sir P. Dun's or other Dublin Hospital	The various Dublin Hospitals		The various Dublin Hospitals
Clinical Lectures -	..	..		..
Surgery - - -	Dr. E. H. Bennett	Profs. Sir W. Stokes and W. Stoker		Mr. P. J. Hayes and Mr. McArdle
Operative Surgery -	Dr. E. H. Bennett			
Midwifery, &c. - -	Dr. A. V. Macan	Prof. F. W. Kidd		Dr. A. J. Smith
Medicine - - -	Dr. Finny	Prof. J. W. Moore		Sir C. J. Nixon
Medical Jurisprudence -	Dr. Bewley	Prof. Auchinleck		Mr. Roche
Comparative Anatomy -	Prof. Mackintosh	..		Dr. Sigerson and Dr. Blaney [†]
Practical Pharmacy -	Dr. W. G. Smith	Prof. Sir G. F. Duffey		Dr. Quinlan
Logic - - -	The College Tutors	..		..
Physics - - -	Prof. FitzGerald	Prof. Lapper		[Medical Registrar] Dr. Birmingham Prof. Stewart [†]
Pathology - - -	Mr. O'Sullivan	Prof. Arthur H. White		Dr. McWenney
Ophthalmology and Otology	Royal Victoria Hospital	Profs. Jacob, Fitzgerald, and Story		Dr. Werber
Hygiene - - -	Dr. Bewley	Sir Charles Cameron		Mr. Roche

* In Summer.

† In Winter and in Summer

Medical Schools of Ireland for the Session 1899-1900.

BELFAST QUEEN'S COLLEGE		CORK QUEEN'S COLLEGE		GALWAY QUEEN'S COLLEGE	
Lecturers	Fees First Course	Lecturers	Fees First Course	Lecturers	Fees First Course
	£ s.		£ s.		£ s.
Dr. W. H. Thompson	3 0	Dr. J. J. Charles	3 0	Dr. Pye	3 0
Dr. J. Symington	2 0		..	Dr. Pye	2 0
Dr. Symington and Demonstrators	3 0	Dr. Charles and Demonstrators	3 0	Dr. Pye and Demonstrators	3 0
Dr. Lettis	2 0	Dr. Augustus E. Dixon	2 0	Dr. Senier	2 0
Dr. Lettis†	3 0	Dr. Augustus E. Dixon	3 0	Dr. Senier	3 0
Dr. W. Whittle	2 0	Dr. C. Y. Pearson	2 0	Dr. Colahan	2 0
Dr. E. O. Cunningham‡	2 0	Professor Hartog	2 0 each	Dr. R. J. Anderson	2 0
..	..	..	..	Dr. Lynham	2 0
Prof. W. B. Morton	2 0	Prof. William Bergin	2 0	Professor Anderson	2 0
Belfast Royal and other Hospitals	..	North and South Infirmaries	..	Galway Hospital, Gal- way Union Hospital, and Galway Fever Hospital	Sess. 5 0
..	..	..	..	Drs. Kinkad, Pye, Brereton, Colahan, and Lynham	..
Dr. Sinclair	2 0	Dr. S. O'Sullivan	2 0	Dr. W. Brereton	2 0
Dr. Sinclair*	2 0	Dr. S. O'Sullivan	2 0	..	..
Dr. J. W. Byers	2 0	Dr. Corby	2 0	Dr. Kinkad	2 0
Dr. Lindsay	2 0	Dr. W. E. Ashley Cum- mins	2 0	Dr. Lynham	2 0
Dr. Hodges	2 0	Dr. C. Yelverton Pearson	2 0	Dr. Senier } Dr. Kinkad }	2 0
..	..	..	..	[Modern Languages: Professor Steinberger]	..
Dr. V. G. L. Fielden	2 0	Dr. C. Yelverton Pearson	..	..	2 0
Professor J. Park	2 0	Professor Stokes	1 0	Professor French	2 0
..
Dr. J. Lorrain Smith	2 0	Dr. Cotter	2 0	Dr. McKelvey	2 0
Dr. W. A. McKenna	2 0	Dr. Sandford	..	..	..
Dr. E. A. Lettis and Dr. Henry Whitaker	2 0	Dr. Donovan	..	..	..

† Zoology in Winter ; Botany in Summer.

‡ Including Biology.

MARKING.

(a) A numerical system of marks, ranging from 0 to 10, is now in use.

(b.) A uniform standard of 50 per cent. is the passing mark in all subjects, and in all examinations.

(c.) In deciding as to whether a candidate has passed in any subject or not, the marks in all the divisions of the subject—written, oral, and practical—are considered together; provided, however, that bad answering in the clinical portion shall not be compensated for by excellence in the other portions of the subject.

EQUIVALENT EXAMINATIONS.

Candidates are referred for detailed information to the Official Regulations published by the Colleges.

MATRICULATION AS PUPIL OF THE ROYAL COLLEGE OF SURGEONS.

All persons proceeding to the study of Medicine may, if approved by the Council, become matriculated pupils of the College on payment of five guineas, and having done so, will enjoy the following privileges:—

1. They will, if matriculated before the preliminary examination, be admitted on payment of £1 1s. (half fee).

2. They will be permitted to study in the Library and Museums of the College.

3. Their fee for the First Professional Examination will be reduced by £5 5s.

DATES OF CONJOINT EXAMINATIONS.

Preliminary - - - March and September.

Professional - - - April, July, and October.

REGULATIONS FOR CANDIDATES FOR THE CONJOINT DIPLOMA IN STATE MEDICINE.

The following regulations are compulsory on all Candidates beginning the study of Sanitary Science after January 1st, 1894; the date of commencement of study being fixed by the date of the certificates.

Stated Examinations for the Diploma in State Medicine com-

mence on the first Tuesday of the months of February, May, and November, and occupy four days.

A special Examination for the Diploma can be obtained—except in the months of August and September—on payment of £5 5s., in addition to the ordinary Fees mentioned below, and on giving notice at least one fortnight before the date of the proposed Examination.

Every Candidate for the Diploma in State Medicine must be a Registered Medical Practitioner. He must return his name to the Secretary of the Committee of Management under the Conjoint Scheme, Royal College of Physicians, Dublin, three weeks before the Examination, and lodge with him a Testimonial of Character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh, together with certificates of study as hereinafter set forth.

Candidates registered as Medical Practitioners or entitled to be so registered after 1st January, 1890, must comply with certain Resolutions passed by the General Medical Council on December 1st, 1893, in regard to Diplomas in State Medicine.

. The *Rules* as to study shall not apply to Medical Practitioners registered, or entitled to be registered, on or before January 1st, 1890.

. The Executive Committee [of the General Medical Council] has power, in special cases, to admit exceptions to the Rules for the Registration of Diplomas in Sanitary Science, and report the same to the General Council.

The Fee for the Examination is Ten Guineas, which must be lodged in the Ulster Bank, Dublin, to the credit of the Committee of Management, at least two weeks before the date fixed for the Examination. Fees are not returned to any Candidate who withdraws from, or is rejected at, any Examination. The Fee for re-examination is Five Guineas.

The Examination for the Diploma in State Medicine comprises the following subjects:—State Medicine and Hygiene, Chemistry, Meteorology, and Climatology, Engineering, Morbid Anatomy, Vital Statistics, Medical Jurisprudence, Law.

IV.

APOTHECARIES' HALL IN IRELAND.

The First, Second, and Third Professional Examinations are held four times a year—viz., commencing the third Monday in January, April, July, and October.

The final Examinations are held in January and July.

The Fees payable for each Examination are as follows :—

First Professional	-	-	£5	5	0
Second „	-	-	5	5	0
Third „	-	-	5	5	0
Final Examination	-	-	6	6	0

Ladies who comply with the regulations will be admitted to these examinations.

Candidates may be admitted to a Special Examination, under special circumstances, which must be laid before the Examination Committee. If the Candidate's application be granted, an extra fee of Ten Guineas over and above the full fee is required.

Candidates already on the Register will receive the Diploma of the Hall, on passing an Examination in the subjects which are not covered by their previous qualifications, and on paying a fee of Ten Guineas. If Medicine or Surgery is required, Two Guineas extra will be charged.

COURSE OF STUDY FOR THE DIPLOMA.

Candidates who desire to obtain the Letters Testimonial of the Apothecaries' Hall in Ireland must, before proceeding to the Final Examination, produce evidence of having been registered as a Medical Student for 57 months; also of having attended Courses of Instruction as follows :—

Winter Courses of Six Months.

One Course each of the following :—

Anatomy (Lecture).

Chemistry—Theoretical.

Midwifery.

Practice of Medicine.

Physiology, or Institutes of Medicine.

Surgery.

Dissections, two courses of six months each.

Courses of Three Months.

One Course of each of the following :—

Materia Medica.

Medical Jurisprudence.

Chemistry—Practical.

Practical Physiology and Histology.

Operative Surgery.

Physics.

Clinical Ophthalmology.

Biology.

Clinical Instruction in Mental Disease.

Pathology.

Vaccination.

Medico-Chirurgical Hospital, twenty-seven months, to be distributed at the Student's own discretion over the last four years of his study. The Candidate may substitute for nine months in this Hospital Attendance six months as a Resident Pupil. He will be required to present a certificate of having taken notes of at least six Medical and six Surgical cases recorded under the supervision, respectively, of a Physician and Surgeon of his Hospital.

Three months' study of Fever—which may be included in his twenty-seven months' Hospital Attendance—in a Hospital containing Fever Wards, and having taken notes of five cases of Fever—viz., either Typhus, Typhoid, Scarlet Fever, Small-pox or Measles.

Six months' Practical Midwifery and Diseases of Women during the Winter or Summer of the third or the fourth year, at a recognised Lying-in Hospital, or Maternity.

Three months' Practical Pharmacy, in a recognised Clinical Hospital or a recognised School of Pharmacy, or a year in the Compounding Department of a Licentiate Apothecary or a Pharmaceutical Chemist.

Each Candidate, before receiving his Diploma, must produce evidence that he has attained the age of twenty-one years.

EXAMINATIONS FOR THE DIPLOMA.

All information relative to the Examinations may be obtained from the Registrar of the Apothecaries' Hall, 40 Mary-street, Dublin.

DENTAL EDUCATION AND EXAMINATIONS IN IRELAND.*

The Royal College of Surgeons in Ireland grants Diplomas in Dental Surgery under conditions of which the following is a synopsis:—

The Candidate must be twenty-one years of age.

The Candidate must have passed three Examinations.

1. Preliminary (identical with the Medical Preliminary).

* Fuller particulars can be obtained by application to the Registrar, Royal College of Surgeons, St. Stephen's-green, Dublin.

2. Primary Dental. Fee, £10 10s. (This Examination is much the same as the Second Conjoint Professional.)

3. Final Dental Examination. Fee, £10 10s. Candidates are examined in Dental Surgery and Pathology, and in Mechanical Dentistry and Practical Metallurgy.

Candidates are required to do gold fillings, and construct mechanical work in the presence of the Examiners.

The Certificate required may be divided into General and Special.

1. The General Certificates required are about the same as those required by the Medical Student for the Second Conjoint Professional Examination.

The Special Certificates may be subdivided into—

1. Dental Hospital. 2. Practical Mechanical Dentistry.

1. Dental Hospital. Two years' attendance, with Lectures in Dental Surgery and Pathology and in Mechanical Dentistry and Orthodonty. Fee, £28 7s.

2. Practical Mechanical Dentistry. Three years' instruction from a Registered Dentist. The fee for this is variable, but may be set down at from £50 to £150.

Large reductions in the Special Certificates required are made in the cases of qualified Medical Practitioners.

INDIAN MEDICAL SERVICE.

THE Military Secretary, India Office, has sent for publication the following list of the candidates for Her Majesty's Indian Medical Service who were successful at the competitive examination held in London on July 28, 1899, and following days:—

	Marks		Marks
1 MacGilchrist, A. C.	3,151	12 Thornely, M. H.	2,400
2 Goodbody, C. M.	2,867	13 Stephen, L. P.	2,356
3 Megaw, J. W. D.	2,732	14 Murison, C. C.	2,335
4 Thurston, E. O.	2,619	15 Murphy, W. O'S.	2,261
5 Steen, R.	2,571	16 Beit, F. V. O.	2,172
6 MacInnes, J. L.	2,565	17 Mackenzie, H. M.	2,139
7 Gilbert, L.	2,550	18 Long, W. C.	2,085
8 Browse, G.	2,542	19 Todd, L. B.	2,046
9 Matthews, E. A. C.	2,497	20 Corry, M.	1,945
10 Stokes, T. G. N.	2,415	21 Beamish, G. C.	1,943
11 Elwes, F. T.	2,410	22 Williams, H. A.	1,939

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D. Univ. Dubl.;
P.R.C.P.I.; F. R. Met. Soc.;
Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four Weeks ending Saturday, September 9, 1899.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Aver- age Rate for 4 weeks	Towns, &c.	Week ending				Aver- age Rate for 4 weeks
	Aug. 19	Aug. 26	Sept. 2	Sept. 9			Aug. 19	Aug. 26	Sept. 2	Sept. 9	
23 Town Districts	25.0	24.7	25.7	28.3	25.9	Limerick -	8.4	23.9	8.4	35.1	19.0
Armagh -	14.3	7.1	28.5	14.3	16.1	Lisburn -	17.0	8.5	42.6	17.0	21.3
Ballymena	22.5	0.0	45.1	5.6	18.3	Londonderry	15.7	23.6	20.4	36.1	24.0
Belfast -	21.8	26.5	24.1	23.7	24.0	Lurgan -	13.7	4.6	18.2	13.7	12.6
Carrickfergus	29.2	5.8	11.7	17.5	16.1	Newry -	8.1	28.2	8.1	12.1	14.1
Clonmel -	19.5	9.7	73.0	4.9	26.8	Newtownards	17.0	0.0	39.7	28.3	21.3
Cork -	23.5	22.8	27.7	27.7	25.4	Portadown -	24.7	24.7	24.7	37.1	27.8
Drogheda -	26.6	3.8	11.4	22.8	16.1	Queenstown	5.7	23.0	28.7	17.2	18.7
Dublin - (Reg. Area)	34.5	30.7	29.4	36.7	32.8	Sligo -	20.3	5.1	10.2	0.0	8.9
Dundalk -	4.2	29.3	33.5	29.3	24.1	Tralee -	5.6	0.0	16.8	0.0	5.6
Galway -	34.0	15.1	37.8	7.6	23.6	Waterford -	21.9	21.9	13.9	51.7	27.4
Kilkenny -	33.0	4.7	18.9	14.2	17.7	Wexford -	27.1	13.5	18.1	18.1	19.2

In the week ending Saturday, September 9, 1899, the mortality in thirty-three large English towns, including London (in which the rate was 22.2), was equal to an average annual death-rate of 25.2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22.6 per 1,000. In Glasgow the rate was 23.3. In Edinburgh it was 21.2.

The average annual death-rate represented by the deaths registered during the same week in the Dublin Registration Area and

in the twenty-two principal provincial Urban Districts of Ireland was 28·3 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,053,188.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 7·0 per 1,000, the rates varying from 0·0 in nine of the districts to 18·6 in Portadown—the 8 deaths from all causes in that district including 3 from diarrhoea. Among the 159 deaths from all causes registered in Belfast are 4 from whooping-cough, 8 from enteric fever, and 19 from diarrhoea. The 40 deaths in Cork include 1 from measles and 15 from diarrhoea. There were 6 deaths from diarrhoea in Londonderry, 3 in Limerick, 2 in Newry, and 2 in Wexford.

In the Dublin Registration Area the births registered during the week amounted to 198—96 boys and 102 girls; and the deaths to 251—140 males and 111 females.

The deaths, which are 93 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 37·4 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the area, the rate was 36·7 per 1,000. During the thirty-six weeks ending with Saturday, September 9, the death-rate averaged 28·5, and was 1·2 over the mean rate for the corresponding portions of the ten years 1889–1898.

The number of deaths from zymotic diseases registered was 83, being 15 over the number registered in the preceding week, and 54 in excess of the average for the 36th week of the last 10 years. The 83 deaths comprise 17 from measles, 2 from scarlet fever (scarlatina), 2 from influenza, 2 from whooping-cough, 1 from diphtheria, 7 from enteric fever, 5 from simple cholera and choleraic diarrhoea, 42 from diarrhoea (being 26 in excess of the average number of deaths from that cause in the corresponding week of the last ten years, and 6 over the number for the previous week), 1 from anthrax, and 1 from erysipelas. Fifty-nine of the 83 deaths from zymotic diseases—including 15 from measles, 2 from scarlatina, and 39 from diarrhoeal diseases—occurred among children under 5 years of age, those from diarrhoeal diseases comprising 25 infants under one year old.

The cases of measles admitted to hospital during the week amounted to 43, being 4 over the number admitted in the preceding week, but 23 under the admissions in the week ended August 26. Forty measles patients were discharged, 6 died, and 127 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week.

Seven cases of scarlatina were admitted to hospital, against 4 in the preceding week and 11 in the week ended August 26. Eight patients were discharged during the week, one died, and 45 remained under treatment on Saturday. This number is exclusive of 18 convalescents at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

The number of cases of enteric fever admitted to hospital, which, having risen from 41 in the week ended August 19 to 64 in the following week, fell to 47 in the week ended September 2, rose to 61. Twenty-five patients were discharged during the week, 2 died, and 214 remained under treatment on Saturday, being 34 over the number in hospital at the close of the preceding week.

The admissions to hospital included 3 cases of typhus fever and one of diphtheria: 3 cases of the former disease and 2 of the latter remained under treatment on Saturday.

Thirty-one deaths from diseases of the respiratory system were registered, being 13 over the average for the corresponding week of the last ten years, and 18 over the number for the previous week. They consist of 18 from bronchitis and 13 from pneumonia.

METEOROLOGY

Abstract of Observations made in the City of Dublin, Lat. 53° 20, N., Long. 6° 15' W., for the Month of August, 1899.

Mean Height of Barometer, -	-	-	30.070 inches.
Maximal Height of Barometer (on 1st, at 9 a.m.),	30.392	„	
Minimal Height of Barometer (on 29th, at 7 p.m.),	29.595	„	
Mean Dry-bulb Temperature,	-	62.2°	
Mean Wet-bulb Temperature,	-	59.5°.	
Mean Dew-point Temperature,	-	57.3°	
Mean Elastic Force (Tension) of Aqueous Vapour,	469	inch.	
Mean Humidity, -	-	-	84.6 per cent.
Highest Temperature in Shade (on 24th),	-	77.8°.	
Lowest Temperature in Shade (on 10th),	-	49.1°.	
Lowest Temperature on Grass (Radiation) (10th)	44.0°.		
Mean Amount of Cloud,	-	39.0	per cent.
Rainfall (on 10 days),	-	3.784	inches.
Greatest Daily Rainfall (on 5th),	-	2.227	inches
General Directions of Wind, -	-	-	E., E.N.E., W.

Remarks.

August, 1899, was the hottest experienced for very many years. In Dublin the mean temperature was 63.4°, or 3.7° above the average and 0.4° above that of August, 1893, hitherto the record

August as to warmth. It was a month of paradoxes—the rainfall was much in excess, the rainy days were much in defect; the weather was dry, the air was damp: easterly and westerly winds were the most prevalent. In and near Dublin thunderstorms of quite exceptional violence occurred between the 4th and 6th, the thunder and lightning on the night of the 5th being to some observers magnificent, to others appalling. The excessive rainfall accompanying this storm is noteworthy—it amounted to 2·227 inches in Dublin (Fitzwilliam-square). It was the fifth occasion only since 1865—that is, in 35 years—upon which 2 inches have been measured in Dublin at 9 a.m. as the product of the previous 24 hours' precipitation. The previous excessive falls were—August 13, 1874, 2·482 inches; October 27, 1880, 2·736 inches; May 28, 1892, 2·056 inches; and July 24, 1896, 2·020 inches. The “splashes” of rain on the 3rd of the month (·300 inch), the 5th (2·227 inches), and the 31st (·696 inch) contributed 85 per cent. of the entire precipitation, which was 3·784 inches. The measurement on the 5th alone equalled 59 per cent. of the total fall. The amount of cloud was singularly small—only 39·0 per cent.; at 9 a.m. it was 47·4 per cent., at 9 p.m. it was as low as 30·5 per cent.

In Dublin the arithmetical mean temperature (63·4°) was decidedly above the average (59·7°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 62·2°. In the thirty-four years ending with 1898, August was coldest in 1881 (M. T.=57·0°), and warmest in 1893 (M. T.=63·0°). In 1898 the M. T. was 61·4°; in 1879 (“the cold year”) it was 57·7°. August, 1899, thus established a record for high temperature.

The mean height of the barometer was 30·070 inches, or 0·173 inch above the corrected average value for August—namely, 29·897 inches. The mercury marked 30·392 inches at 9 a.m. of the 1st, and fell to 29·595 inches at 7 p.m. of the 29th. The observed range of atmospheric pressure was, therefore, 0·797 inch.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 62·2°. It was 1·1° above the value for July, 1899. Using the formula, *Mean Temp.* = *Min.* + (*max.*—*min.* × ·47), the mean temperature was 63·0°, or 3·7° above the average mean temperature for August, calculated in the same way, in the twenty-five years, 1865–89, inclusive (59·3°). The arithmetical mean of the maximal and minimal readings was 63·4°, compared with a twenty-five years' average of 59·7°. This is the highest value for August since the present series of observations was commenced in 1865. On the 24th the thermometer in the screen rose to 77·8°—wind, S.S.E.; on the 10th the temperature

fell to 49.1° —wind, E. The minimum on the grass was 44.0° , also on the 10th.

The rainfall was 3.784 inches, on 10 days. The average rainfall for August in the twenty-five years, 1865–89, inclusive, was 2.825 inches, and the average number of rainy days was 15.5. The rainfall, therefore, was considerably in excess of the average, while the rainy days were much below it. In 1874 the rainfall in August was very large—4.946 inches on 18 days; in 1868, also, 4.745 inches fell on, however, only 13 days; but the heaviest downpour in August occurred in 1889, when 5.747 inches were registered on 22 days. On the other hand, in 1884, only .777 inch was measured on 8 days. In 1898, 3.456 inches fell on 18 days.

High winds were noted on 9 days, but never attained the force of a gale in Dublin. Thunder occurred on the 5th, 6th, 25th and 27th. Lightning was seen on the 3rd, 6th, 11th and 27th. Violent thunderstorms prevailed on the 4th, 5th and 6th. Temperature reached 70° in the screen on 18 days. Solar parhelia were seen on the 24th. The atmosphere was foggy on the 3rd, 4th, 7th, 11th, 21st, 22nd and 28th.

The rainfall in Dublin during the eight months ending August 31st amounted to 18.200 inches on 117 days, compared with 16.516 inches on 124 days in 1898, 19.388 inches on 149 days in 1897, 14.464 inches on 120 days in 1896, 9.455 inches on 96 days during the same period in 1887, and a twenty-five years' average of 17.558 inches on 128.1 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in August was 2.640 inches on 11 days, compared with 3.185 inches on 18 days in 1898, 6.195 inches on 27 days in 1897, and 1.245 inches on 14 days in 1896. Of this quantity 1.610 inches fell on the 5th. The total fall since January 1 amounts to 25.630 inches on 120 days, compared with 17.830 inches on 112 days in 1898, 25.945 inches on 143 days in 1897, 14.327 inches on 91 days in 1896, 22.685 inches on 107 days in 1895, 25.206 inches on 131 days in 1894, and 16.341 inches on 106 days in 1893.

At the National Hospital, Newcastle, Co. Wicklow, the rainfall in August was 1.877 inches on 13 days, compared with 3.803 inches on 16 days in 1898, and 4.526 inches on 20 days in 1897, .966 inch being measured on the 5th, and .334 inch on the 3rd. Since January 1, 1899, the rainfall at this Second Order Station has been 23.748 inches on 117 days compared with 20.101 inches on 110 days in the first 8 months of 1898. The maximal temperature in the shade was 74.6° on the 1st, the minimum temperature was 47.0° on the 16th.

PERISCOPE.

EXAMINATION OF CANDIDATES FOR THE ROYAL ARMY MEDICAL CORPS AND HER MAJESTY'S INDIAN MEDICAL SERVICE.

The following papers were set for the recent Examinations:—

Medicine and Pathology.—Professor McCall Anderson. Friday, 28th July, 1899, from 10 a.m. to 1 p.m. N.B.—The replies to be written with the ink provided, and not with a pencil or pale ink. 1. A man, aged 36, had for some months been below par, and was losing flesh and colour, but continued at work, until one day, when he rapidly became comatose. On recovering consciousness, it was found that his right arm and leg were completely, while the lower segment of the face on the same side was partially, paralysed, and to every question he returned for answer either "Yes" or "No." His heart was not sound, but there were no murmurs, and dropsy was absent. He had never had syphilis. Fill in the picture of all the additional symptoms which might be present. Give the diagnosis in full, and what would you find *post-mortem* in the event of a fatal issue? 2. Give an account of the indirect (pressure) symptoms which may be encountered in cases of aneurysm of the arch of the aorta. 3. Give a short sketch of the complications of diabetes mellitus. 4. How can you satisfy yourself (a) that pus is present in the urine, (b) that it comes from the pelvis of the kidney, and (c) how would you treat the condition?

Surgery.—Sir William MacCormac, Bart., K.C.V.O. Friday, 28th July, 1899, from 2 p.m. to 5 p.m. All four questions to be answered. 1. How is a dislocation backwards of the hip joint produced? Give the diagnosis and treatment of the injury. 2. What are the different forms of cystic disease met with in the female mamma? Give the pathology, symptoms, and treatment of each variety. 3. For what conditions may iridectomy be required? Describe the operation, and give the after treatment of a case. 4. State fully the considerations which would influence your decision as to the treatment, either by amputation or by excision, of a case of tuberculous disease of the knee-joint in a young adult.

Anatomy and Physiology.—Dr. Cunningham. Saturday, 29th July, 1899, from 2 p.m. to 5 p.m. 1. Describe the fascia of the psoas muscle, the fascia iliaca, and the fascia transversalis, laying particular stress upon those connections which bear upon the anatomy of psoas abscess, and of femoral and inguinal hernia. 2. Describe "Hunter's Canal," and state clearly the relative position of the parts contained within it. 3. Give the form, position, and relations of each suprarenal body, and mention what you know of its function. 4. Describe the optic nerve, the optic

chiasma, and the optic tract, and state the central connections of the fibres which form the optic tract.

Chemistry and Materia Medica.—Dr. Norman Moore. Saturday, 29th July, 1899, from 10 a.m. to 1 p.m. 1. What is the composition of chloroform? How is it prepared? 2. State the composition, and explain, with formulæ, the chemical preparation of (1) sulphuric acid, (2) hydrochloric acid, (3) nitric acid, (4) carbolic acid. 3. What rules regulate the strength of tinctures in the latest edition of the British Pharmacopœia? Give examples. 4. What is opium? What alkaloids does it contain? What are its official preparations, and what the strength of each? 5. What are the therapeutic uses of mercury and of its salts? What are their official preparations and doses?

Natural Sciences.—Dr. Norman Moore. Friday, 4th August, 1899, from 2 to 5 p.m. Candidates may answer not more than six questions, and they must confine themselves to two branches of science only. *Geology and Physical Geography*:—1. How would you recognise an extinct volcano? What traces of volcanic action are to be observed in the British Isles? 2. What are the chief fossils of the mountain limestone? What beds lie immediately above and what immediately below that rock in the British Isles? 3. Describe the effects of (1) glacial action, (2) earthquakes. *Physics*:—1. Describe Attwood's machine and explain its use. 2. State the facts which demonstrate that, with the exception of tidal energy, all the work done in the world is due to the sun. 3. Explain the electrical phenomena illustrated and the apparatus necessary in sending an ordinary telegraphic message. *Botany*:—1. Give the characters of the following natural orders: (1) Primulaceæ, (2) Iridaceæ, (3) Convolvulaceæ, (4) Linaceæ, (5) Polygonaceæ. Describe the structure of an orchis, and explain the method of fertilisation in that genus. 2. What is the botanical nature of (1) ergot of rye, (2) potato disease, (3) smut of corn, (4) lily disease? 3. Define the following terms:—(1) Umbel, (2) spike, (3) capitulum, (4) raceme, (5) placenta, (6) albumen, (7) bract, (8) petiole, (9) sepal, (10) cyme, and give an example of each. *Zoology*:—1. How would you recognise a poisonous snake? Describe the structure of the skull and the anatomy of the poison apparatus in any such snake. What difference of action is there between the poison of the cobra and that of a viper? 2. Name the entozoa which inhabit the human body, and describe fully the structure and development of any one form. 3. Describe the placentation of (1) the elephant, (2) the mare, (3) the cow, (4) the cat; and the dentition of (a) the sheep, (b) the rabbit, (c) the dog, (d) the sloth.

In Memoriam.

JAMES CUMING, M.D., A.M., R.U.I.; F.R.C.P.I.;

PROFESSOR OF MEDICINE, QUEEN'S COLLEGE, BELFAST.

WITH much regret we chronicle the death of this distinguished member of the medical profession on the night of Sunday, August 27, 1899, in the sixty-seventh year of his age.

PROFESSOR CUMING was a great physician and a courtly Irish gentleman. We are indebted to the *Belfast News-Letter* of Tuesday, August 29, 1899, for the following able sketch of his life and work:—

It is with deep regret that we have to record the death of PROFESSOR JAMES CUMING, M.A., M.D., F.R.C.P.I., which occurred unexpectedly at midnight on Sunday. DR. CUMING, who occupied a prominent place in the medical profession, and whose skill, not less than his integrity and public spirit, has been familiar for many years to almost every resident in the North of Ireland, was seized with a severe attack of influenza more than twelve months ago, from which he never made complete recovery. Indeed, in the summer of 1898 he was obliged to relinquish his duties for some weeks, and in the succeeding winter, finding the strain of College lectures too heavy for him, he was relieved by Doctor Lindsay in this, one of the very numerous departments of his work. Of vigorous temperament and exhaustless energy, he continued, from the commencement of the present year almost up to the hour of his death the performance of the multifarious duties associated with an immense practice, active membership of learned societies, and devoted service of some of our worthiest local institutions, with which he had been long associated. For some time past, however, he was attended by Professor Whitla and Dr. Lindsay, who, it is scarcely necessary to state, were unremitting in attention to their eminent colleague. DR. CUMING's city residence was 33 Wellington-place, Belfast, but the closing days of his life were spent at Green-island, where, in company with his sister, Miss Cuming, his son, Mr. Francis Cuming, a member of the English Bar, and his daughter, the Honourable Mrs. Russell, who is married to the eldest son of Lord Russell of Killowen, he resided at Loughside. His death was wholly unexpected—the previous day he had been attending to professional duties in Belfast—and the news of it came as a painful shock to his relatives, friends, colleagues, and the wide circle of his acquaintance. Late on Sunday evening he was seized with a severe attack of coughing, followed by much exhaustion, and shortly before midnight he summoned his son and daughter to his bedside. They arrived immediately, only to find the end fast approaching, and within a few minutes he breathed his last, death being due to heart failure.

The late PROFESSOR CUMING, son of the late Mr. Edward Cuming of

In Memoriam.

Markethill, County Armagh, was born early in 1833 in that town, and was consequently in his 67th year. Having received his early tuition at the Royal School in Armagh, he entered in the session of 1849-50 Queen's College, Belfast, of which he was one of the earliest students. Devoting his attention to both science and art—medicine being his especial study—it was not long before he gained collegiate distinctions, followed by a brilliant career in the late Queen's University, in which he became a Doctor of Medicine in 1855, and a Master of Arts in 1858. He distinguished himself in most branches of science, and was senior scholar in chemistry, his ardent interest in this pursuit being the foundation of a close friendship with the late Professor Andrews, then Vice-president of the College. Having completed his university course, he left Belfast, carrying with him the good wishes of every fellow-student, for the Continent, where he studied under Charcot in Paris, imbibing from this famous scientist his love for the treatment of nervous diseases. With additional knowledge, acquired in Vienna and other centres of learning and research, he returned to Belfast and began to practise in the city, where he married Miss M'Loughlin, a member of one of the oldest Roman Catholic families in Belfast, and at that time one of the great beauties of Ulster. In 1865 he was appointed to the chair of Theory and Practice of Medicine in the Queen's College, on the death of Professor Creary Ferguson, for whom, during his illness, he had on several occasions lectured. The same year he became staff physician to the Royal Hospital, an institution with which he was identified up to the time of his death; latterly as senior physician and president of the medical staff. The distinction was conferred upon him in 1876 of being elected to the Fellowship of the Royal College of Physicians of Ireland. Though not a voluminous writer, his contributions to medical literature are not likely to be forgotten. Among the most important of these may be numbered his "Contributions to the Study of some Thoracic Diseases," published in 1868, and his "Treatise on the Pathology of Delirium Tremens," which was in print a year later. His private practice rapidly extended, and during the last two decades he has been called in to consult with other practitioners concerning thousands of critical cases, with the result that his memory will be gratefully cherished in many families who attribute the rescue of a loved one to his skilful advice. In 1882, on the dissolution of the Queen's University, the honorary degree of Doctor of Science was conferred upon him, and two years later, when the annual meeting of the British Medical Association was held in Belfast, he had the especial honour of being elected president of that body. He filled the chair with great dignity and ability, which found recognition in his subsequent choice as a vice-president of the Association. As a matter of fact he held every post of honour in connection with the medical profession, being president of the Ulster Medical Society on two occasions, president of the North of Ireland Branch of the British Medical Association, and Lord Chancellor's Visitor in Lunacy (a post to which he was appointed by Lord O'Hagan). The study of mental diseases was one which, together with that of the heart and nervous troubles, he enthusiastically pursued, and his opinions were often sought

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on special occasions. He took the deepest interest in the work of the Asylum Board, of which for a quarter of a century he was a member, and barely a fortnight ago he presided over the monthly meeting of that body, at which it was resolved to hold a special conference for the consideration of the important subject of providing accommodation for the harmless lunatics in the Workhouse. By a melancholy coincidence the special meeting in question was to have been held in the Town Hall at noon yesterday, and it was only at that time that most of the members received the news of the sudden death of DR. CUMING, who latterly had directed their procedure as an efficient, experienced, and painstaking chairman. To the late professor's devotion to the Royal Hospital during over a quarter of a century reference has already been made, but it may be added that he acted as a representative of the staff on the Royal Victoria Hospital committee, and quite recently, when the plans of the new building were finally settled, he took the deepest interest in them, and thoroughly supported the originality of the architect's design. For many years, too, he was consulting physician to the Ulster Eye, Ear, and Throat Hospital, a position which he occupied with sound judgment and tact. His patients not only found his remarkable professional skill devoted to the most critical forms of illness, but that the physician was also the friend, taking a most kindly interest in the everyday concerns of their life. Esteemed greatly by them, he enjoyed perhaps the still higher regard of his colleagues, occupying a unique position in the medical profession and being consulted on all points of difference where sound judgment, not always of a purely professional nature, became requisite. He was a man of the very highest culture and scholarship, possessing keen literary tastes. An accomplished linguist, he spoke several modern languages, and more especially French and German, with great fluency. His example was of enormous value to the younger members of the profession, as indicating the importance of all-round culture. He had a thorough knowledge of the ancient classics, as well as of modern works, his moments of leisure being spent almost exclusively in the companionship of books, and up to the last he was completely conversant with the best examples of latter-day authorship. Quite recently, at the Literary and Scientific Society of Queen's College, Belfast, he read a most interesting paper on Horace—his favourite poet—whom, together with Heine and Goethe, it was his wont to discuss brilliantly before the members of the old Belfast Literary Society.

Professor Byers, a college colleague, whose father was born in the same neighbourhood and attended the same school as the late DR. CUMING, called to see him at Wellington-place on the Friday preceding his death. On that occasion DR. CUMING mentioned that he had decided to visit America in the *Oceanic*, in the company of the Right Honourable W. J. and Mrs. Pirrie, by whom he had been invited to make the passage, and of the Lord Chief Justice. But he added in his quiet, thoughtful way the words which now form such pathetic reading—"If nothing happens between this and the day of sailing." On Saturday, August 26th, as already mentioned, DR. CUMING left Greenisland, where

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he has been in country residence for twelve months or so, to visit Strandtown and Windsor, but was seized with cardiac asthma the same night. On Sunday he spent a restless day, and between eleven and twelve o'clock at night he had another alarming seizure, and died in the presence of his son, daughter, and sister. The late Dr. CUMING's wife predeceased him five or six years ago, and the relatives who most closely feel his loss are those already mentioned, together with his brother, Mr. Edward Cuming, a member of the North-East Bar of Ireland. In the medical and philanthropic world he will be long and sincerely mourned; his death has removed by no means the least distinguished and valued among the citizens of Belfast.

The death of Dr. CUMING is a grievous loss (writes an intimate friend and colleague) to the medical profession and the public of the North of Ireland. His was a unique personality, such as arises only now and again in any locality or in any profession. He was much more than an erudite and skilful physician, and an accomplished scholar. He was a man of universal attainment to whom no branch of liberal culture was unfamiliar, and he possessed a personality which exercised a remarkable influence over those with whom he was brought into contact. His sagacity had almost passed into a proverb with his medical brethren, and his advice and assistance were specially prized in cases and circumstances of exceptional difficulty. He was, in truth, as he was so often called, "the Nestor of his profession," a title which has seldom been more justly bestowed. Wisdom, the fruit of wide culture and large experience, was, indeed, his leading characteristic. Seldom have there been found united so great a range of knowledge and such various attainments with such complete absence of ostentation and self-consciousness as in the case of the deceased physician. Dr. CUMING seemed unconscious of his own greatness, and was always ready to discuss any question of medicine, science, or general knowledge on equal terms with any of his brethren. His intellectual acuteness, breadth of view, and knowledge of affairs and men have seldom been excelled and would have secured him eminence in any profession. As a physician, his leading characteristics were an all-embracing knowledge of medical science and a degree of reticence and caution which sometimes seemed excessive to those who failed to reflect that this was founded upon a most exceptional familiarity with all the multifarious possibilities of disease. Dr. CUMING refused to dogmatise because he knew, as few men knew, how protean are the operations of nature, how unfathomable are the possible ranges of natural law. To him "modest doubt" was ever "the beacon of the wise." His attitude towards younger and cruder minds, prone to flatter themselves that they could see further than he was able to do, was ever that of playful banter and benignant toleration. Unlike the majority of mankind, he always knew more than he professed to know. "I always understate my case," was a remark once made by him to the writer of these recollections. Those who knew him best would unanimously agree that, while the physician was great, the man was greater. Dr. CUMING gave an impression of power and faculty which did not find an entirely adequate field for their exercise in the profession of

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Medicine, and it is to be regretted that his reluctance to engage in authorship has deprived the world of the full fruits of his large knowledge and exceptional experience. His literary taste was fine and true, and he wrote a vigorous and polished style, but he has left very few published works behind him. DR. CUMING had read widely in the classics and in the chief modern languages. Horace was a great favourite with him, and it is not straining facts to say that in genial wisdom, charming drollery, kindness of disposition, and delightful "urbanitas" he had much in common with the great humorist and poet of the Augustan age. Among the moderns, Shakespeare, Goethe, Wordsworth, Tennyson, and Browning were his chief delight. In philosophy he ranked Spinoza and Herbert Spencer very highly, and was inclined to undervalue Plato and Kant. He put a high value upon general culture and disapproved of the present-day tendency to make medical education concern itself too exclusively with physical science.

To the outside world DR. CUMING seemed chiefly the grave and reserved physician, but those who enjoyed his intimate friendship found him a delightful companion, full of knowledge, wit, and wisdom, playful and genial even when under the shadow of failing health, an accomplished raconteur, and a charming conversationalist. As an after-dinner speaker, he was often most happy, by turns grave and gay, full of apt quotation and felicitous allusion, and with a wit which sparkled, but never wounded. His was essentially a large and tolerant nature, incapable of meanness or unkindness, loyal to friends, magnanimous to opponents. It is not surprising that with such qualities and endowments he should have achieved a position of unique influence and distinction, or that he should have been for many years the acknowledged head of the medical profession in the North of Ireland. His memory will be long cherished by his colleagues, his patients, and the larger world to which he was so conspicuous a figure, but most of all by the inner circle which alone fully knew his worth and which sorrowfully recognises that it will not look upon his like again.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XV.—*Sarcoma of the Suprarenals and secondarily of the Lungs.*^a By J. MAGEE FINNY, M.D. Dubl.; Past President of the Royal College of Physicians of Ireland; King's Professor of Practice of Medicine in the School of Physic, Ireland; Physician to Sir P. Dun's Hospital.

THE specimens I exhibit are the left lung and the suprarenals, which are the seat of sarcoma, and, by the kindness of Dr. O'Sullivan, Lecturer in Pathology, Trinity College, Dublin, there are under the microscopes several sections of the diseased organs.

The patient from whom these specimens were obtained was admitted to Sir Patrick Dun's Hospital on 13th October, 1898, and died 20th November, 1898.

The following notes of the case were compiled from those taken by Mr. Gibbon Fitzgibbon, my clinical clerk, to whom I am indebted for his careful and accurate daily records:—

The patient was sixty-six years of age, a labourer in the gas works, and complained of cough, copious expectoration and debility. He looked very haggard and emaciated, and his complexion was notably darker than that of any other patient in the ward, or what we are accustomed to see in those labourers exposed to the heat and

^a Read before the Section of Pathology of the Royal Academy of Medicine in Ireland, Friday, February 24, 1899.

vapours at the gas works, who apply for medical aid at the hospital.

The arteries on his forehead, and the radials, were tortuous and atheromatous. The ascending aorta was dilated, and caused an area of dulness and pulsation in the second and third right intercostal spaces near the sternum. A double murmur was audible in this area, but as it was limited to it, and the pulse was not collapsing, it was considered to be due to an atheromatous dilated vessel rather than obstructive and regurgitant disease of the aortic valves; the cardiac area of dulness was not discernible owing to the emphysematous condition of the border of the left lung, and the cardiac impulse was indistinctly defined in its normal position. There was no dextrocardia.

Examination of the lungs showed the right to be normal, except for emphysema; but the left side was dull on percussion over the lower lobe behind from the fourth rib down, and this dulness did not pass further forward than the mid-axillary line. The dulness did not change on change of posture, and over this area there was an absence of respiratory and vocal sounds, and of vocal fremitus. The upper part of the thorax on the left side in front gave a modified skodaic resonance. It was plain therefore that we had to deal with a case of encysted pleurisy. One or two unusual features were noted—(1) that the decubitus of the patient was on or towards the right or healthy side; and (2), that an area of acute sensitiveness and tenderness to pressure existed over the fourth and fifth ribs and intercostal spaces near the nipple.

On November 4th the pleura was explored in the scapular line at the ninth interspace and a syringe of bright red fluid was withdrawn, which on examination was found to be blood-stained serum, with some leucocytes in it, but these were healthy.

On November 7th a trochar and canula was inserted twice, but no fluid was withdrawn, although with an exploring needle and hypodermic syringe half an ounce of fluid was withdrawn similar to that of the 4th.

As there was no special urgency to tap, and as the nature of the fluid and the constitutional cachexia made me consider it a case of cancer of the pleura, no further attempt to withdraw the fluid was made then or subsequently, and there were no changes noticed in the physical signs, except that, a few days later, a distinct friction sound was audible under the pectoral fold in front of the mid-axillary dulness already referred to. The urine

was examined on several occasions and found free from albumin. During the last week of his life he suffered from sleeplessness, progressive weakness, and nocturnal sweatings. The sputum was examined for tubercle bacilli on two occasions with a negative result.

The pulse was usually between 104 and 120. The respiration was not increased, and the temperature rose generally every second day to 101° – 101.6° , and fell to subnormal or normal on the intermediate day.

The patient died of asthenia on 20th November, 1898.

The *post-mortem* was made by Dr. Littledale, our then House Surgeon, and the contents of the thorax, the diaphragm, and the kidneys were removed *en masse*, and revealed a very interesting pathological study:—

The heart was greatly hypertrophied, without much dilatation of the cavities; the mitral valve was healthy; the aortic valves were thickened, but not ulcerated, and capable of meeting and closing the opening; the coronaries were calcified, and the aorta presented an excellent example of calcareous plates and rugosities, with very great and general dilatation, producing, in fact, a *cylindroid* aneurysm.

The left pleura costalis was enormously thickened, and contained a quantity of blood, which was encysted to the posterior half of that side. The lower lobe of the left lung was a mass of soft, grumous, bloody detritus, which when scooped out left a ragged cavity, without any limiting membrane, and showed a sarcoma infiltrating to more or less depth the rest of the middle part of the lobe.

Below the diaphragm, but unattached to it, the seat of the left adrenal was occupied by a tumour the size of a foetal head, and which lay above and upon the left renal arteries and veins, and pressed into the left kidney. It was a mass of sarcoma rapidly breaking down, and full of blood. When emptied of its contents the sac was distinct from the kidney, while into its infiltrated walls a small probe could be passed from the left renal vein. A similar condition, but to a much smaller extent—not larger than a pullet's egg—was found in the right suprarenal body.

Thus the case was one in which the left bloody pleurisy played but a small part, except so far as supplying the only physical feature recognisable during life, while there were three distinct foci of sarcomatous disease—viz., the left

suprarenal, the right suprarenal, and the centre of the lower lobe of the left lung.

From the rarity of sarcoma being a primary disease of the lungs, and the frequency of the suprarenals being the first part affected by this pathological neoplasm, it was not improbable, as Dr. O'Sullivan suggested, that the disease originated in the connective tissue or vessels of the left adrenal, that by the open vein it passed through the left renal vein into the circulation, and directly affected the right adrenal, and that by embolic infarction it found its final resting-place in the substance of the left lung. The most careful examination failed to show any extension from the adrenals to or through the diaphragm.

Dr. O'Sullivan has kindly made numerous and various microscopical sections of the left kidney and of the lung. These showed sarcoma of a mixed character, and, what was most remarkable and strange, a number of giant polynuclear or myeloid cells, containing as many as twelve or fourteen nuclei, and resembling exactly those found in sarcoma springing from the periosteum or ends of bone. The case presented therefore the rare peculiarity—not unknown in the life-history of sarcoma—of reproducing cells of connective tissue type, which was not that of the matrix from which it grew, inasmuch as there was in it a complete absence of any bone disease.

ART. XVI.—*The Nordrach Treatment of Phthisis in Scotland.* By DAVID LAWSON, M.A., M.D. (Ed.).

To say that popular notions are frequently fallacious is to express a truism. No better example of a widely accredited fallacy can be cited than the view commonly held, that the further north one goes the lower does the temperature become. No doubt it has been due to the tacit acceptance of this belief that Scotland, ever in the van of medical progress, has thus far hesitated to venture upon a trial of the Nordrach treatment of phthisis in her own land.

True it is that Dr. Caverhill, at the meeting of the British Medical Association, held in Edinburgh in 1898,

strongly urged the advisableness of the system receiving a fair trial north of the Tweed. And it is equally true that Dr. R. W. Philip has, at a great disadvantage and under great difficulties, done good work in and around Edinburgh, and has published the results of his efforts. But it is not seriously contended that the Nordrach treatment in its entirety has yet been attempted. It is now proposed to make that attempt.

Some time ago the matter was fully and carefully considered by a number of the leading consulting physicians in Scotland, and as a result of their deliberations a site has been acquired in what is by them, after an exhaustive consideration of the climatic and surrounding conditions, believed to be *par excellence* the most desirable locality in Scotland for that purpose. Among those whose guidance and support have rendered the trial possible are the following prominent physicians:—Sir Thomas Grainger Stewart (Professor of Practice of Medicine, Edinburgh University), who hails it as a genuine effort to bring our treatment of phthisis up to date, but whose health would not permit him to take any active part in the initiation of the scheme; Sir William Gairdner (Professor of Practice of Medicine, Glasgow University); Professor Finlay (Professor of Practice of Medicine, Aberdeen); Professor M'Call Anderson, Drs. George A. Gibson, Muirhead, Affleck, Robertson, Halliday Croom, Byrom Bramwell, &c.

Nordrach-on-Dee Sanatorium is being erected upon the estate of Sir Thomas Burnet, to the westward of Banchory, and $18\frac{1}{2}$ miles from Aberdeen. It thus fulfils the desideratum of being far removed from any large centre of population. Its air, free from every possible source of contamination, is singularly pure and bracing. Surrounded on all sides by pine woods, it does not lack for these terebinthine vapours, nor for that shelter from strong winds which is so highly desirable during the winter months. Rich in ozone—over $2\frac{1}{2}$ per cent.—the atmosphere may reasonably be expected to further those oxidation processes which make for health, and to assist the constitution in its struggle against anaerobic foes.

The temperature of the air at this part of Deeside during

the winter months is truly surprising. I have before me a table showing the temperature for each day during the six weeks succeeding 1st December, 1890, taken at Greenwich and at Deeside respectively. The mean temperature for that period at Deeside was 36° F., and at Greenwich 28.1° F. Thus the temperature of this northern district possessed an advantage over that of the south of England during the month of December, 1890, of nearly 8° F.

The qualities of purity and warmth do not exhaust the desirable properties which the air of this district possesses. It is a dry air. The rainfall—26 inches—is unexpectedly low, lower indeed than that of the south, and the percentage of bright sunshine—30 per cent.—is relatively high. In the latter respect Nordrach-on-Dee claims a most surprising superiority over our much-lauded South of England climate. Kew observatory enjoys 29 per cent. and Greenwich but 26 per cent. of bright sunshine.

South-west winds prevail during nearly nine months in the year. These winds in previously passing over the Grampian range of mountains become depleted of their moisture. This no doubt accounts for the relatively low rainfall, and for the proportionately high percentage of sunshine which this district enjoys. These warm winds, prevailing, as they do, for the most part during the winter months of December, January, and February, account for the by no means generally known fact that during winter more warmth prevails in the north-east of Scotland than in the south-east of England. This fact is of great value, when it is remembered that patients are expected to live in the open air all the year round.

Such are the considerations which determined us in our choice of middle Deeside, and to regard it as the most desirable district in Scotland in which to test the feasibility of carrying out the Nordrach treatment in our own climate.

ART. XVII.—*The Topography of the Facial Nerve in its relation to Mastoid Operations.*^a [Abstract.] By ROBERT DWYER JOYCE, M.R.C.S.

IN connection with this subject I have made a systematic examination of 30 temporal bones with the object of ascertaining the precise relations of the facial nerve to the surface of the adult skull; its depth, as well as that of the external semicircular canal from the surface; and the relation of both these structures to the operations on the mastoid region.

For the material upon which the examination was conducted, as well as for many valuable suggestions, I am greatly indebted to Professor Birmingham, in whose laboratory the work was carried out.

Method.—Each temporal bone was cut vertically from before backwards, beginning in the angle between the petrous and squamous portions, so as to expose the aqueduct of Fallopius in its entire extent; the external semicircular canal was also cut across by the same section in every case.

Then I projected the facial canal on the surface by drilling from the exposed canal outwards. In order to do this correctly it was necessary to make the holes accurately at right angles to the sagittal plane, and of course parallel to one another. For this purpose I constructed the following simple contrivance:—A wheel-drill was fastened down on a sliding bed, so that the drill was capable of backward and forward movement only. An end-board was then fastened at right angles to the end of the base-board in which the drill-bed moved. This end-board was so fastened that it could be shifted about in a vertical plane perpendicular to the line in which the drill worked. Each bone was now fastened to the end-board in correct (physiological) position by embedding it in dentist's "modelling composition," with the exposed facial canal towards the drill. Now, the drill always working in the same direction, and the bone capable of adjustment while remaining in a plane at right angles to the drill (*i.e.*, sagittal, as the bone was in correct position), I

^a Read before the Sixth International Otological Congress, London, August, 1899.

was enabled to get a perfectly true projection of the facial canal on the surface. Next I measured the distance of the facial canal from three points on the surface of the bone (see Fig.)—viz., A, a point immediately behind the external auditory meatus on a horizontal line passing through its centre; B, a point immediately behind the upper part of the meatus and immediately below the level of its upper margin; C, a point high up over the middle of the meatus on the posterior root

of the zygoma. The points A and B are taken as representing the anterior lip of the bone wound when the mastoid is opened below or above respectively. Also B is the point from which, as Birmingham has shown, the antrum may in every case be tapped, with least danger to both the lateral sinus and the cranial cavity, by a small drill or trephine sent straight in. The distance of the facial canal from C is of importance in removing the outer wall of the attic from the external auditory meatus.

Results.—The line of projection of the facial nerve lies on the posterior and superior walls of the external auditory meatus, about midway between the sulcus tympanicus and the outer margin of the bony meatus (see Fig.). As regards the relation of the facial nerve to the mastoid process, a straight drill-hole 3 or 4 mm. behind the posterior wall of the meatus and parallel to it will in every case strike the nerve if sent in far enough. This holds true from the level of the floor

of the meatus to within 4 mm. of the roof. I have found the distance of the facial nerve from the surface to vary very considerably. From the point A the average distance was 16.75 mm., the minimum being 13.25 mm. From the point B the average distance was 18.5 mm., and the minimum 14.75 mm. From the point C the average was 19.4 mm., and the minimum 16.25 mm.

The average distance of the external semicircular canal from B was 18.56 mm., and the minimum 13.75. The average distance from C was 18.5 mm., the minimum being 16.25 mm.

Summary.—(1) The facial canal lies altogether in front of the mastoid process, and a drill sent *straight* in from any point on the surface of the latter cannot injure the nerve.

(2) Measured from the point B the facial canal was in 43.3 per cent. of cases more superficial than the external semicircular canal; in the same percentage of cases this was just reversed; and in the remaining 13.4 per cent. these two structures were the same distance from the surface. Thus the external semicircular canal cannot be taken as a guide to the depth of the facial nerve.

(3) The average distance of the facial canal from the point B is slightly less than that of the external semicircular canal from the same point.

(4) In removing the outer wall of the attic it should be remembered that the external semicircular canal is almost always (91 per cent.) nearer the surface, at the point C, than the facial nerve; however, as it is 1.5 mm. higher than the latter, it is almost out of danger; besides, it has a thicker covering of compact bone in this situation (attic) than the nerve.

ART. XVIII.—*Localised Outbreaks of Typhoid Fever apparently due to Infected Milk.* By SIR CHAS. A. CAMERON, C.B.; M.D.; D.P.H. (Camb.); Hon. F.R.C.P.I.; F.R.C.S.I.; &c.

A DAIRY establishment owning 18 milch cows is situated on the northern side of the Phoenix Park, Dublin. In August last the proprietor and his sister were ill with what was understood to be some kind of fever. On the 27th of September the proprietor was admitted into the Meath Hospital and County of Dublin Infirmary, and treated for typhoid fever. His sister had previously been admitted into another Dublin hospital.

It would appear that a woman had been in attendance on the patients who also had attended to the business of the dairy. The milk from this dairy was used in the Depot of the Royal Irish Constabulary, Phoenix Park, in the barracks (Bessborough) of the Dublin Metropolitan Police, Phoenix Park, in the Cabra Auxiliary Workhouse of the North Dublin Union, in Morgan's and Mercer's Endowed Schools, near the Phoenix Park, and in a few private houses.

Outbreak in the Constabulary Depot.—In August there were 600 Constabulary, 40 women, and 100 children in the Depot. The milk supplied to the sergeants' mess and quarters came from what I shall designate the suspected dairy above referred to. The acting-sergeants and constables obtained their milk from another source.

In last August cases of enteric fever began to occur amongst the inmates of the Depot, and in that month and the following one 20 of the Constabulary, 2 women, and 10 children were attacked by the disease. Five of the Constabulary succumbed to it, but none of the women or children have died up to the present, and they are now believed to be out of danger.

It was not till September that it was known that serious sickness had occurred to the owner of the suspected dairy. The milk which he supplied was submitted by Dr. Baird to a bacteriologist, who did not detect the typhoid bacilli in it, but found that it contained *Bacilli coli communes*, which are to be found in sewage and filth generally.

It would appear that the milk supplied to the sergeants

from the suspected dairy was believed by the constables to be superior to that which was furnished to them, and accordingly several of the men purchased the milk from the suspected dairy. The milk which did not come from this dairy was examined bacteriologically, but no micro-organisms associated with disease or sewage were detected in it.

Inquiries made by the Constabulary authorities elicited the fact that it was only the persons who used the milk from the infected dairy who contracted typhoid fever in August and September.

Outbreak at Bessborough Police Barracks.—Twenty-one policemen were stationed in these barracks. Between the 7th and the 24th of September six of them developed typhoid fever, which in the case of one of the patients terminated fatally. All the patients had used milk from the suspected dairy.

Outbreak at Cabra Workhouse.—In this workhouse children were lodged under the care of twelve nurses—all nuns. The milk supplied to the nurses came from the suspected dairy, whilst the children's supply came from another source.

During September four of the nuns were stricken down with typhoid fever, to which disease one of them succumbed in October.

Outbreak at Morgan's and Mercer's Endowed Schools.—These schools are next to each other. Morgan's has accommodation for forty boys and Mercer's for thirty-six girls. Fortunately only about one-third of the girls had returned to the school before the outbreak commenced.

The cases of enteric fever in Morgan's School comprised three masters, eight pupils, and three maid servants. Three pupils and two maids died.

In Mercer's School but one case of typhoid fever occurred, but without a fatal result.

Cases in Private Houses.—Two lieutenants of the Royal Army Medical Corps, residing on the North Circular-road, who used milk from the suspected dairy, and a captain in the Army Pay Department, who also used the milk, are now suffering from typhoid fever.

A girl residing in a house near the suspected dairy was sent to that establishment with a message from her mother. The child was given a tumbler of milk, which she drank. She is now a typhoid fever patient in the Adelaide Hospital.

I am informed on good authority that two persons residing on the North Circular-road, and who are ill with enteric fever, were supplied with milk from the suspected dairy.

Two persons in Cowper-street and two persons in Weston-terrace, who used milk from the suspected dairy, are suffering from typhoid fever, but are considered out of danger.

It is a curious circumstance that in the dairy premises in question there is no well or pump. It is difficult to understand how cleanliness could be properly observed under such circumstances.

I have it on the authority of Mr. J. Collins, Chief Inspector of Dairies and Dairy Yards, that water for the use of the dairy was sometimes taken from the "Poor Man's Well," Blackhorse-lane. In this locality for some time past typhoid fever has been somewhat prevalent. The water in this well was examined last month, and found to be tolerably good, but a later analysis which I have made gave unfavourable results, as will be seen by the following:—

Colour, looked at through a tube		
two feet long -	-	Very slight yellow
Odour at 100° F.	-	Nothing peculiar
Suspended Particles	-	Numerous
Turbidity (after standing)	-	None
Sediment	-	Considerable
Total Solid Matters contained in		
one gallon (70,000 grains)		
(in grains) -	-	53·200
Including—		
Albuminoid Ammonia	-	0·024
Saline Ammonia	-	0·013
Nitrous Acid	-	None
Nitric Acid	-	3·120
Chlorine	-	4·572
Sulphuric Acid	-	4·320
Equal to Calcium Sulphate	-	6·000
Phosphoric Acid	-	Trace
Hardness	-	40·000

It contained a rather large number of micro-organisms, including some *Bacilli coli communes*. The quantities of both albuminoid and saline ammonia were excessive, and indicated

a decided, though not excessive, pollution. The well is not protected from surface drainage.

I am informed that the water from a pump at Bessborough Barracks was often taken to the dairy in the cans which had brought milk to the barracks. The following is its composition :—

Colour, looked at through a tube			
two feet long -	-	-	Slight yellow
Odour at 100° F.	-	-	Nothing peculiar
Suspended Particles	-	-	Numerous
Turbidity -	-	-	Very slight
Sediment -	-	-	Slight
Total Solid Matters (one Imperial			
gallon contained in grains)			38·500
Including—			
Albuminoid Ammonia	-	-	0·012
Saline Ammonia	-	-	0·030
Nitrous Acid	-	-	None
Nitric Acid	-	-	Trace
Chlorine -	-	-	4·671
Sulphuric Acid	-	-	Trace
Equal to Calcium Sulphate	-	-	Trace
Phosphoric Acid	-	-	Trace

The presence of so large a quantity of ammonia in this water clearly indicated some, though not extensive, pollution, and accordingly I recommended that the use of the water, unless boiled, should be discontinued.

Prevalence of Typhoid Fever in the Autumn of 1899.—It must be admitted that typhoid fever has been more than usually prevalent in Dublin and its suburbs in the autumn of 1899. During the decade ended in 1898 the mean number of deaths ascribed to typhoid fever in the months of August and September was 29; in the same months of the present year the number was 50, or 21 above the mean number in the corresponding period in the previous ten years. The increase is by no means sufficient to render it at all probable that the outbreaks above described might have occurred if the patients had not been supplied with milk from the suspected dairy.

A dairy supplied with the milk of 18 cows is not a very ex-

tensive establishment, yet at least 66 persons suffering from enteric fever have been consumers of milk supplied by it. It appears to me to be one of the most convincing cases of the spread of typhoid fever by infected milk which has been recorded. It is now nearly twenty years ago since I published in this Journal the particulars of an outbreak of fever caused by infected milk from a Dublin dairy; 65 of the persons who drank the milk suffered from typhoid fever, and 6 of them died from that disease.

It is unfortunate that notifications of illness in the suspected dairy were not made until long after its commencement. It appears that several years ago the Notification of Infectious Diseases Act was adopted by the Guardians of the North Dublin Union, in which the suspected dairy is situated. As, however, no circulars, notification forms, or directed envelopes, were sent to the medical practitioners of the district, it seems to have been forgotten that notification was compulsory. The new North Dublin Rural District Council are now taking steps to make it known that the medical men in their district must notify cases of infectious disease.

ART. XIX.—*Clinical Reports of the Rotunda Hospitals, for One Year, November 1st, 1897, to October 31st, 1898.* By R. D. PUREFOY, F.R.C.S.I. (Master); and R. P. R. LYLE and H. C. LLOYD, Assistants.

(Continued from page 172.)

CÆSAREAN SECTION.

CASE I.—M. C., aged thirty, 1st pregnancy; admitted on October 4th from Extern Maternity, from which she was sent in for pelvic contraction. She had been in labour for four and a half hours. She was only 4 feet 4 inches in height, and was much deformed. There was considerable prominence of the chest, marked lordosis, curved femora, 9 inches long, and twisted, bayonet-shaped tibiae.

On vaginal examination the conjugate was found to be much contracted, the promontory so high above the symphysis as to give the impression that there was a displacement of one or two lumbar vertebrae. On measuring with Skutsch's pelvimeter it was found that the true conjugate was only $6\frac{1}{2}$ cm. (or $2\frac{1}{2}$ ins.), and the

transverse $9\frac{3}{4}$ cms. The os was the size of half a crown, and the membranes unruptured. The head had not engaged.

The abdomen was opened, the uterus drawn forward and opened by a longitudinal incision, and the child extracted alive with some difficulty. The placenta and membranes were withdrawn, and the uterine wound closed by means of interrupted silk sutures, which passed through the entire thickness of the uterine wall. The abdominal wall was closed by silkworm-gut sutures, including all three layers.

The pulse, which was 100 on admission, commenced to rise immediately after the operation, and on the first evening was 120, with temperature of 99.4° F. A vaginal douche was given next day; the temperature was still below 100° F. On the third evening, the temperature rising to 102° , a uterine douche was given with difficulty, owing to the prominence of the promontory, above and at the back of which the uterus lay, and some *débris* was washed away. The next day, as the thermometer registered 102.6° F., uterus was again douched and plugged with iodoform gauze, and this was continued twice daily throughout. On the 10th day she began to complain of cough, and the examination of the chest revealed rhonchi on both sides. Poultices were applied, and the signs on the right side disappeared, though crepitations were heard at the left base; breathing was frequent and expectoration free. On the 18th day she had a slight shivering, temperature ranging between 98.6° F., and 101° F., and pulse 130 to 156. Next day there were bubbling râles at the left base, extending a considerable way towards the apex and rhonchi on the right side; the heart was beating tumultuously at about 156 beats per minute. The expectoration was black and very foul. From this the temperature ran steadily up and reached 104.6° F. on the 20th day, when she died, the pulse being 164.

The *post-mortem* showed that the stitches in the uterine wall had sloughed out, and there was a collection of about $\frac{3}{4}$ ii. of pus encysted between the uterus and the abdominal wall, to which it was adherent. The finger could be passed through the wound in the uterus and out at the cervix, yet there was at no time any discharge of pus through the uterus. There was no sign of peritonitis. The liver was much enlarged and very friable. The base of the left lung contained two large abscesses full of thin, foul-smelling pus. The abdominal wound had healed perfectly.

CASE II.—J. D., aged twenty-four, 1st pregnancy; admitted June 11th. A history of a drinking bout followed by severe headache,

preceding onset of labour pains at full time. There was then vomiting and loss of speech, with a condition verging on coma. On admission, the right pupil was dilated and insensible to light, the left being contracted and reacting. There was nystagmus in this eye. No paralysis of the limbs was evident. The temperature was 101° F., and pulse 156, the action of the heart being very violent. There were no labour pains, and after an enema containing chloral and pot. brom., she became quiet, but gradually passed into an unconscious condition, with laboured breathing, which gradually ceased. The abdomen was opened as soon as the patient was found to be dead and the child extracted, but no effort could resuscitate it. It weighed 8 lbs. *Post-mortem* examination showed acute suppurative meningitis. There was a quantity of pus over the occipital lobes.

The percentage application of forceps in the Extern Maternity was 1.67 per cent., and in the Intern 3.97 per cent. This great difference is most probably due to the fact that the proportion of primiparæ to multiparæ is far greater in the Intern Maternity than in the Extern.

In one case the forceps were applied to the second of twins, as the head remained in the brim for five hours, and the child commenced to show signs of distress. Delivery was easy and the child alive.

In another case the patient had an epileptiform seizure as she came into the second stage. She passed no urine during the day, and the bladder was empty; an hour later she had another seizure, when it was considered necessary to apply the forceps. After delivery she was given half a drachm of bromide of potassium and 15 grains of chloral hydrate, after which she slept for nineteen hours. On awakening the catheter was passed, and 36 ounces of pale urine of low specific gravity, and containing no albumen, were drawn off; a few hours later 19 ounces were drawn off. Convalescence was normal.

One patient—a 6-para, aged twenty-eight—was admitted in a very excited state. She was considerably under the influence of alcohol, and during the pains, which were frequent, she strained violently. On examination the os was found fully dilated, head barely engaged in the brim and her pulse 120; the foetal heart was irregular. She had a history

of forceps on all her previous confinements. Forceps were applied, and the child, weighing $6\frac{1}{4}$ lbs., delivered alive with some difficulty. The pulse remained rapid and feeble for three hours after delivery, and as she continued restless and excitable, she was given $\frac{1}{4}$ gr. of morphia hypodermically. She became maniacal soon after delivery, but it passed off on the ninth day, and she was discharged well on the eleventh. The temperature fluctuated between 99° F. and 100° F., and on one occasion reached 101° F.

TABLE No. VII.

Application of Forceps.

Indication		Dead Children	Remarks on Dead Children
Delay in 2nd stage over four hours* - -	35	4	One child was macerated; in two, though no foetal heart was heard for some time previously, forceps had to be applied on behalf of the mother.
Threatened death of foetus - -	6	2	
Rise in maternal temperature and pulse -	4	1	No foetal heart heard on admission.
Delay with pelvic contraction - -	1	1	
Prolapse of funis -	4	4	Three admitted with funis prolapsed.
Hyperemesis - -	1	1	
Eclampsia - -	2	1	Seven months' foetus.
Convulsions (with anuria) - -	1	—	
Mania acuta - -	1	—	
Hæmatoma vulvæ -	1	—	
Threatened rupture of uterus - -	1	—	
Total -	57	14	

* There were two occipito-posterior positions.

SUB-TABLE A.

Applications of Forceps.

I.-para.	-	48	VI.-para.	-	2
II.-para.	-	2	VII.-para.	-	1
III.-para.	-	1	XIV.-para.	-	1
IV.-para.	-	2			
Total					57

SUB-TABLE B.

Ages of Primiparae.

17-25	-	-	21
26-30	-	-	20
31-35	-	-	6
36-45	-	-	1

INDUCTION OF PREMATURE LABOUR AND DEFORMED PELVIS.

There were five cases of deformed pelvis, in three of which labour was induced.

CASE I.—M. C., aged thirty, 5-para; four previous children, all stillborn. Pelvis measured $3\frac{1}{2}$ inches in the true conjugate, and $4\frac{1}{2}$ inches in the transverse diameter. Müller's method was tried, and, as the head would not descend, it was decided to induce labour by Krauze's method; the membranes, however, ruptured in the passing of the bougies. Next day, as labour did not commence, the bougies were removed, bipolar version was performed, and a foot brought down. Four and a half hours later the child, weighing 5 lbs., was born alive; the head was delivered by Smellie's method the patient being in Walcher's position.

CASE II.—E. C., aged thirty-three, 10-para; 8 months pregnant; nine previous children were all stillborn. Pelvis measured $3\frac{3}{8}$ inches in the true conjugate. Krauze's method was tried twice unsuccessfully. On the third occasion three bougies were passed, five laminaria tents were placed in the cervix, and the vagina plugged with boiled cotton wool. Twenty-four hours later these were removed, and a hot vaginal douche of creolin solution was given. During the next day two more hot douches were given, and the fundus frequently massaged, after which the patient came into labour. The child, which was lying in the

transverse diameter, was turned to a vertex by external version, and some hours later the patient delivered herself of a living child weighing $6\frac{1}{4}$ lbs.

CASE III.—K. C., aged thirty-five, 4-para. Had a history of one child stillborn, one dying soon after instrumental delivery, and a third delivered by forceps with difficulty, still living. The pelvis measured $3\frac{1}{2}$ inches in the true conjugate. Labour was induced by Krauze's method, but the labour pains passed away when the os was one-half dilated; the membranes were then ruptured, and labour pains commenced again. When she was in the second stage she got maniacal, and could with difficulty be kept in bed. She was anæsthetised, and delivered by the forceps of a living child weighing $4\frac{1}{2}$ lbs. Convalescence in these three cases was normal.

CASE IV.—C. D., aged twenty, 1-para, contracted pelvis; measurement not recorded. Patient was delivered with the forceps. She had a severe attack of secondary post-partum hæmorrhage on the fifth day, otherwise the convalescence was normal.

CASE V.—Reported under "Cæsarean Section."

HYDROCEPHALUS AND PARACENTESIS CAPITIS.

There were three cases of hydrocephalus, two of which had to be tapped.

CASE I.—K. O'K., aged twenty-one, 1-para; presentation, vertex; foetus putrid, weighing 9 lbs.; delivery unaided. Membranes and placenta also putrid; vaginal and uterine douche.

CASE II.—M. R., aged twenty-nine, 9-para; presentation, breech; foetus weighed 8 lbs. The aftercoming head was tapped, and was extracted by Smellie's method.

CASE III.—B. N., aged forty-one, 5-para; presentation, vertex. While the patient was lying quietly in bed, unconscious of labour pains, the membranes ruptured and there was severe hæmorrhage. On examination the os admitted two fingers, and the head, which was hydrocephalic, was resting on the brim. It was tapped, a large quantity of fluid coming away; bipolar version was then performed, and a foot brought down, the subsequent delivery being left to nature. Foetus weighed 11 lbs. In every case convalescence was normal.

CRANIOTOMY.

This operation was performed in three cases.

CASE I.—K. M., aged thirty-eight, 10-para. Detailed under "Brow Presentations."

CASE II.—E. D., aged thirty-nine, 10-para. Admitted in great suffering from the country, where two unsuccessful attempts had been made to deliver with the forceps the previous day. On admission the vulva was much swollen, the head free above the brim, large caput succedaneum, and no foetal heart audible. Craniotomy was performed with Auvard's instrument; delivery was easy and convalescence normal.

CASE III.—C. W., aged twenty-two, 4-para; her previous children were all born dead. On examination the head was found balloting above the brim and the pelvis obviously contracted, though not measured; the membranes were unruptured, and the os nearly fully dilated. On examining her again forty-five minutes later the foetal heart could not be heard, the cord was prolapsed and pulseless. Craniotomy was accordingly performed. Convalescence was normal.

VERSION.

Version was performed eleven times; external cephalic version was performed twice prior to rupture of the membranes—in both instances for oblique presentations. In one of these cases the cord presented, but the child was dead, so delivery was left to nature.

Internal podalic version was performed in three instances—twice for prolapse of the arms, and once for placenta prævia lateralis with face presentation. In every case the child was born alive. Braxton-Hicks' method of bi-polar version was performed four times—once in a case of generally contracted pelvis, once for placenta prævia, once for prolapse of the cord, and once in a case of hydrocephalus which was tapped. In the two latter cases the child was born dead.

In two cases of transverse presentation, where a hand and foot presented, traction was made on the foot, and the head pushed up. In one of these cases the patient had been in labour forty hours prior to admission, and the membranes had been ruptured several hours. The child was large, weighing 8½lbs., and was extracted with considerable difficulty; it was born dead. The other child was alive.

In two instances only was there a rise of temperature, and both occurred on the evening of the first day, after which the temperature was normal, and continued so.

PELVIC PRESENTATIONS.

Of the 62 cases of pelvic presentation 34 were full-time, 12 premature, and 16 non-viable. Twelve cases occurred in twin pregnancies. Of the 34 full-time cases 27 infants were alive and 7 dead. Of those cases in which the infant was dead, one was a case of hydrocephalus, the after-coming head having to be tapped; another was a case of impacted breech, admitted from the country, where several unsuccessful attempts had been made to deliver her. A strong fillet of iodoform gauze was passed round the groin of the infant, and it was delivered by traction. In two others there was a large retro-placental clot, the placenta and clot coming away in each case immediately the child was born. Of the 12 premature cases 6 infants were alive and 6 macerated.

TRANSVERSE AND OBLIQUE PRESENTATIONS.

Seven cases presented themselves. In two external cephalic version was performed prior to rupture of the membranes, and a tight abdominal binder was applied. In one of these cases there was a presentation of the cord, but no foetal heart could be heard, or foetal movements felt, neither was there any pulsation of the cord, and the child was born dead.

In one case one arm, and in another case both arms were prolapsed into the vagina. In both cases internal version was performed under an anæsthetic, and the children were delivered alive.

Another case of oblique presentation, where the breech would not engage in the brim, was delivered by bringing down a foot.

Another case is reported under "Twins."

In the seventh case a hand and foot presented; the head was in the left iliac fossa. A foot was pulled down, the head pushed up, and the child (which was large, being $8\frac{1}{2}$ lbs. weight) was extracted with considerable difficulty; it was dead.

In every case convalescence was normal.

FACE PRESENTATIONS.

Of the six face presentations two were without special interest, and terminated naturally. In three others the child

was anencephalic, two of which were associated with hydramnios. The sixth was a case of lateral placenta prævia, in which version was performed, and the child delivered alive as a breech presentation. Convalescence in every case was normal.

BROW PRESENTATIONS.

There were three brow presentations. Two were born as vertex, occipito-posterior; one of these was associated with hydramnios, and in the eighth month of pregnancy; the fœtus, although it survived for three hours, was macerated. This patient had a temperature six hours after delivery of 101° F., which rose to 102·6° F. next morning. A creolin uterine douche was administered, and the temperature gradually fell to normal, and continued so, the patient being discharged well on the eighth day.

The third case of brow presentation was admitted with a history of the membranes having ruptured twelve hours previously. Meconium was coming away, os not fully dilated, head free above the brim, and no fœtal heart could be heard. Six hours later the head was still above the brim, but the cervix had retracted, owing principally to the formation of a considerable caput succedaneum. Version being contraindicated, owing to the condition of the uterus, the forceps were applied twice, but without success; the head was then perforated, a large quantity of fluid escaping from it. Craniotomy was performed, and delivery easily effected. It was a left fronto-anterior position. There was a large hydroencephalocoele springing through the occipital bone, extending down the neck and back, and upwards on the scalp; it was about the size of a fœtal head. Convalescence was normal.

There were 17 cases of prolapse of the cord; they are sufficiently described in the following table, with the exception of three—C. W., K. O., and E. M'C.—which are described elsewhere. In the case of one of the children which lived no pulsation could be felt in the cord before delivery.

Convalescence was normal in every case except in the case of L. D. She had a temperature of 101·2° F. on the second and third evenings; a vaginal douche was given on each evening, and the temperature fell to normal and continued so.

TABLE NO. VIII.—*Prolapse of Funis.*

Name	Age	Para	Period of Pregnancy	Presentation	Child	Remarks
A. G.	27	III.	Full time	2nd vertex	D.	No pulsation in cord; forceps; asphyxia pallida
M. C.	37	III.	5½ months	Breech	A.	First of twins died shortly afterwards
C. W.	22	IV.	Full time	Vertex	D.	Craniotomy, <i>q.v.</i>
K. O.	30	IV.	7 months	Hand, foot and cord	A.	Second of twins, <i>q.v.</i>
B. T.	24	I.	Full time	1st vertex	D.	Fœtus expressed
L. D.	22	I.	"	"	D.	Forceps, head on perineum
M. B.	34	X.	6 months	Footling	D.	Placenta prævia marginalis
E. M. C.	31	VIII.	Full time	Oblique	D.	External version, <i>vide</i> "Oblique Presentations"
E. L.	23	I.	"	Footling	A.	Extraction by foot
M. M. E.	33	VII.	"	1st vertex	A.	Expressed; head on perineum
B. C.	30	VII.	"	"	D.	Forceps; membranes ruptured before admission
M. B.	28	IV.	"	"	D.	Forceps; head just through brim
C. M.	28	IV.	"	"	A.	Labour rapid; Schultzed
L. H.	21	II.	"	2nd vertex	D.	No pulsation; child had a large cystic swelling on the right side of neck and chest
S. C.	37	VIII.	"	"	D.	Macerated; membranes ruptured 13 days previously
S. B.	30	V.	"	"	D.	Bi-polar version, and foot brought down
A. R.	19	I.	7½ months	Breech	A.	Second of twins; membranes ruptured

HAND AND HEAD PRESENTATIONS.

On two occasions was the arm prolapsed in full extension in front of the head, once in the second of twins, and once in a 7-para, the head being fixed in the brim in both instances, when the hand presented through the vulva; delivery was left to nature and presented no difficulty. The child in the former case weighed 5½ lbs., in the latter 8½ lbs.

INTERESTING CASES.

CASE I.—M. R., aged twenty-eight, 4th pregnancy. This case is of interest from the fact that the patient—a countrywoman who was on her way to the hospital on foot—was confined at 4 45 a.m. on the road about two miles away. Her husband was the only person near her. The placenta came away in half an hour, after which the husband carried baby and placenta, while the woman walked into the institution, which she reached in a very exhausted condition. The puerperium was uneventful, and she left on the eighth day, mother and baby both well.

CASE II.—A. K., aged twenty-eight, 3rd pregnancy. The confinement was normal; twenty-one hours later, when at stool, there was a procidentia uteri. The uterus was replaced, and a uterine douche administered. Three hours later patient took advantage of the absence of the nurse to leave her bed and walk across the ward; the uterus again came down and was once more replaced. There was no further trouble, and patient went through a normal convalescence, and went out well on the ninth day.

PREGNANCY AFTER HYSTEROPEXY.

CASE III.—L. S., aged twenty-five, 2nd pregnancy. On this patient an abdominal hysteropexy was performed in the hospital two years previously. The first child was born dead, and was anencephalic. She had on this occasion excessive liquor amnii, and the child, weighing $8\frac{1}{4}$ lbs., was anencephalic and had a large meningocele. She was seen two months later; the uterus was retroflexed. It was replaced and a pessary inserted.

CASE IV.—L. F., aged twenty-nine, 3rd pregnancy. Underwent Makenrodt's operation some time before in the hospital; there was nothing of note in her confinement or puerperium. She was seen three months later; the uterus was retroflexed; it was replaced and a pessary inserted.

MYOMATA IN PREGNANCY.

CASE V.—A. M., aged thirty-three, 2nd pregnancy. The delivery was normal; there was a pedunculated fibro-myoma as large as a tennis ball attached to the right side of the uterus by a thin pedicle about two fingers deep. It was very freely movable, and was noted four years previously when patient was in the hospital. It decreased somewhat in size during the puerperium.

**PLATE V.—Case of Procidentia Uteri in an Infant occurring on the
Second Day.**

CASE VI.—A. W., aged twenty-seven, 1st pregnancy. Had also a fibro-myoma on the right side of the uterus. It was as large as an orange and was sessile; she had secondary hæmorrhage. There was marked exophthalmic goitre, for which she underwent treatment elsewhere some time previously, and improved greatly. The pulse continued very rapid during convalescence, and reached 144 on occasions, with temperature ranging about 100° F. The pulse decreased rapidly in frequency when the patient sat up.

PROCIDENTIA UTERI IN AN INFANT.

CASE VII.—The infant of M. K., aged twenty, primipara, was found on the second day to have a prolapse of the uterus and vaginal walls. The whole mass was very readily replaceable, but no contrivance proved adequate to keep the parts in place, and they were forced out again directly the child cried. The baby died in a convulsion on the fourth day, and on opening the abdomen it was found that the fundus uteri was just visible on a level with the pelvic floor, all the ligaments being very lax. The child had also a spina bifida, and double talipes calcaneus. Plate V.

IMPACTION OF SHOULDERS.

CASE VIII.—L. W., 9-para. The head of the child being delivered, it was found impossible to extract the shoulders (which had become impacted in the antero-posterior diameter) in the usual manner. The body was pushed upwards between the pains, when it was found possible to rotate the shoulders into the transverse diameter, when delivery was effected by traction. The child, which was unfortunately dead, weighed 10½ lbs.

SUB-TABLE A.—LIST OF CONCURRENT DISEASES.

Phlebitis	-	-	-	2
Pleuritis	-	-	-	2
Mastitis	-	-	-	16
Influenza	-	-	-	8
Bronchitis	-	-	-	3
Pneumonia	-	-	-	2
Mania	-	-	-	1
Phthisis	-	-	-	1
				<hr/>
Total,				35

TABLE NO. IX.—*Morbidity.*

Temperature	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Total
100·8° F. and under 101·2° F.				7	5	6	7	7	8	7	9	4	77
101·2° F. and under 102·2° F.				2	5	3	5	4	3	6	2	—	42
102·2° F. and under 104° F.				2	2	1	2	2	1	2	3	3	30
104° F. and under 105° F.				—	2	1	1	—	—	—	1	—	7
105° F. and over				1	—	—	—	—	—	—	1	—	2
Total monthly morbidity	11	15	1					1	12	17	16	7	158

From this table it will appear on first sight that the morbidity has been extremely high during the year, but not one rise of temperature occurring on, or subsequent to, delivery of, or above, 100·8° F. has been excluded from our list. On careful examination of the charts we find that in only 42 cases was there any cause to believe the rise was due to infection of the genital canal; no less a number than 81 occurred without any apparent cause, and disappeared without any further treatment than an aperient, and none of these exceeded the normal limits on more than one occasion. Moreover, 35 rises of temperature included in our list were due to a definite cause, without any evidence of infection of the genital canal, and we have tabulated them separately.

All the cases of mastitis, with one exception, were of a trifling nature, and yielded to mild treatment. This case was admitted to the hospital with the right breast full of suppurating sinuses ending in abscess cavities. The patient was anæsthetised, the breast freely opened, curetted, and plugged with iodoform gauze. The patient went out well.

It is very interesting to note that of the total number no fewer than 70 patients were not interfered with before, during, or after delivery, even to the extent of a vaginal examination, also that in 20 other cases a vaginal examination was the only interference.

There were two cases of severe puerperal ulceration of the vagina and cervix, both of which were douched daily and the vagina plugged with iodoform gauze. In one case the temperature (103.8° F.) fell by crisis to normal on the sixth day, and continued so. In the other, the temperature, which resembled closely that of a case of typhus fever, fell by crisis to normal on the fourteenth day of the fever (or seventeen days after the confinement) and continued so. At the commencement of the second week she developed an abscess on the inner side of her right ankle, with a superficial inflammation extending to the knee. The abscess was opened, and about two ounces of pus came away; the inflammation rapidly subsided; the joint was not involved, and there was no further trouble from this source.

Antistreptococcic serum (10 c.cs.) was injected twice daily for one week, but on no occasion was there the slightest reaction, either transitory or permanent.

Ten days after the crisis (27th day) she developed peripheral toxic neuritis, with severe pains in all the joints of the upper extremities and back of the neck, which we attribute to the use of the serum. With this there was a second rise of temperature lasting fourteen days. After this the convalescence was uneventful, and she was discharged two months after admission in good health. Five months later she was seen and was in good health.

TABLE NO. X.—*Mortality.*

Name	Age	Admitted	Delivered	Died	Cause of Death
E. O'D.	32	Dec. 20	Dec. 21	Dec. 23	Cardiac disease
E. K.	36	March 7	March 7	March 8	Chronic Bright's disease
A. M.	28	March 26	March 27	March 28	Hyperemesis gravidarum, <i>q.v.</i>
K. B.	30	June 3	June 4	June 18	Acute mania
J. D.	24	June 11	June 11	June 11	Acute suppurative meningitis
M. C.	30	Oct. 4	Oct. 4	Oct. 23	Pyæmia

CASE I.—E. O'D., admitted from the country with general anasarca, severe dyspnœa and bronchitis, associated with mitral disease and failing compensation. The urine was loaded with albumen. She was delivered nine hours after admission. Considerable improvement took place in her condition under treatment with expectorants, laxatives, and digitalis, until the evening of the second day, when she had a sudden and severe attack of cardiac dyspnœa, and survived only until the next day.

CASE II.—E. K., also admitted with general anasarca and laboured breathing. Face puffy, pulse irregular, urine albuminous, but no abnormal cardiac sounds. She gradually sank and died next day. Autopsy showed that the kidneys were granular and contracted. There was cyanotic atrophy of the liver and œdema of lungs.

CASE IV.—K. B. During the puerperium this patient showed signs of eccentricity. On the fourteenth day she developed puerperal mania and became very violent. Next day she fell into a sleep, the breathing became stertorous, and she died suddenly. No autopsy could be obtained.

CASE V.—J. D. Reported under "Cæsarean Section."

CASE VI.—M. C. See "Cæsarean Section."

THE RIGHT TO PERFORM AN AUTOPSY.

MR. ARTHUR N. TAYLOR, LL.B., is contributing to the *New York Medical Journal* a series of special articles on the law in its relations to physicians. On the subject of the right to perform an autopsy, Mr. Taylor says, under date August 19, 1899:—"The matter may be summed up as follows: An autopsy performed with the consent of the relative who is entitled to the custody of the dead body can never be questioned if properly performed. Such an operation, when performed under direction of law, is never subject to legal punishment, yet the existence of the two cases last examined should be a sufficient reason to convince the cautious practitioner of the advisability of always securing such consent when possible. Where consent is withheld, and the physician feels that a conscientious performance of the duty before him requires that a *post-mortem* examination be made, he should, in furtherance of his own safety, turn the case over to the coroner, or at least act under the direction of that officer."

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Pathology of the Emotions ; Physiological and Clinical Studies. By CH. FÉRÉ, Physician at the Bicêtre. Rendered into English by ROBERT PARK, M.D. London: The University Press, Limited, Watford, London. 1899. Large octavo. Pp. vii-525-xiv.

WHEN to that worshipful company of players of which Snout the bellows-mender, and Snug, the joiner, and Starveling, the tailor, were such eminent ornaments, there appeared the immortal weaver with an ass's head in place of his familiar physiognomy, the carpenter-manager, Quince, in his dismay and despair has no words but these:—"Bless thee, Bottom! bless thee! thou art translated."

Everyone who knows anything of modern psychiatry knows and admires the work of Christophe Féré. His width of culture and his versatility are as remarkable as his keen scientific spirit. Therefore, when this work was placed in our hands we rejoiced, for though we would have preferred to see some other portions of his voluminous writings, some account of his exquisite embryological experiments, or his treatise on epilepsy, or *la Famille Neuropathique*, or his dissertation on the family care of the insane (a subject which he has so persistently and so successfully kept before his countrymen), or a selection of his occasional writings, brought before the English reader rather than "*La Pathologie des Emotions*," which we regard as perhaps the least valuable portion of his work. Yet even this book if it were rendered into English would be instructive and valuable to those who are not sufficiently familiar with French to read the original without loss of time.

It struck us that the work before us was rather late in appearing, and when we looked up our copy of the French and found that the Paris edition was published in 1892 we felt a little surprise. Our surprise diminished when we

had dipped into Dr. Park's version, and as we proceeded honest indignation took the place of surprise.

This translation is one of those works which seem to be executed in anticipation of securing early sale when Volapuk comes into general use. It cannot be fairly said to be written in any tongue current in the modern world. However, we would not like to mislead our readers, and, perhaps, we may be wrong. It may be that Watford, which seems to have developed a university, has some claim like that other twin of learning, Oxford, to be a special exponent of the English tongue, and, therefore, we of the "Silent Sister" should be dumb on this point.

We cannot but wish, however, that the Watford University curriculum included a few lessons in elementary French. It ought to be easy to obtain a teacher or two from the neighbouring village of Stratford atte Bowe.

The translator cannot object to our taking as a sample of his work the following passage from the preface, which Dr. Park has ear-marked by the unpleasant trick, apparently common through the book, of inserting some French words of the original between brackets. "Without entirely neglecting the facts which pertain to history," poor Dr. Féré is made to say, "I have systematically set in relief (*repoussé*) those which are scattered (*répandus*) in literary works whose authors have not proposed for themselves the motive of a biological study, but a description capable of interesting their readers. I have myself dealt almost exclusively with facts drawn from medical works; I believe that this precaution is almost indispensable; it appears to me that it would be wrong to permit oneself to accept as scientific documents, facts reported by literary authors."

There is a thing which theologians call wilful and incorrigible ignorance. In the above passage, not even the contents and the meaning of the whole, as plain as the nose on a man's face, can prevent our translator from glorying in his discovery that *repousser* has but one meaning and that is to set in relief!

Enumerating the forms of nervous enuresis our translator mentioned "the incontinence of those who believe (think?) to urinate some part." We believe (think?) to tingle some

part of our epidermis under the birch of our worthy old schoolmaster if we had ventured to present him with such a piece of translation.

The following is a gem:—"But it is not only the cutaneous sensibility and the cephalic senses which are capable of being affected. The genital sense itself can also be. I observed for several years a patient, aged 38 years, belonging to the class of degenerates, after Morel, by signs, physical and mental (among which are impulsions, meriting a special study), and who, all his life has been incapable of coitus, and even of having an erection otherwise than in full day, or in a chamber lighted *à giorno*; he did not, however, spare the means of supplying the physiological excitation of light."

It merits a special study why men translate a language which they do not understand into another which they cannot write, or what reasons can induce anybody to insult the intelligence of readers by producing *à giorno* an exercise that any child would be ashamed of.

It is generally a reproach to a critic not to have read the entire of the book he reviews, but we must admit that our respect for Féré, and our indignation at the crime that has been committing upon him have prevented us from fulfilling our duty. We cannot say that we have fully measured Dr. Park's atrocities. We can only say that every page at which we have glanced contains passages like the above. Skipping some hundreds of pages we light upon the following:—"A singular emotion which he came to experience"—"incapable of awakening, even in a vigorous young man (which even was not the case), any æsthetic sentiments"—"several times he had, not without astonishment repeated the experience, and the advice which he made me was provoked by the following circumstances." We boldly defy our readers to understand this, "he pretended to be able to recognise continents." It is not said of the Tuscan artist viewing through optic glass the spotty globe of the moon, as the careless reader might suppose, and poor Féré's meaning should thus be rendered in English, "he claimed to be able to distinguish those who were chaste." We are told that the Duke of Anjou wiped his face with the chemise a lady "came

to leave," this being quite a customary rendering of the idiom *venir de*.

We are told that "Hippocrates speaks of one Nicanor who effaced himself at the sound of a flute." Perhaps he does, for we are not familiar with the Coan, but Dr. Féré does not; he only says that Nicanor fainted at the sound of of a flute.

"Eramus said to a madman, 'I am not the fruit of an ennuyed conjugal effort?'" But we protest against such English being addressed to sane folk.

Emotional people are very ridiculous, but why call one of them an "emote"? Emeu would be equally expressive and would be English of a sort. Cassowary or cameleopard might serve and would be sonorous as well. The conduct of the "emote" is as eccentric as his designation—"Besides his mother came to die, he played with a part of his fortune, and gave way to his passion."

Hammond's advice to a victim of homicidal impulse is praised—"He counselled him to recall his sequestration in an asylum." Here we pause to wonder whether it has struck Dr. Park that even a Frenchman generally has some meaning in his language. It is obvious that the translator of passages like these can have taken no meaning out of the words which he renders into this ridiculous jargon.

We cannot pretend to have put before our readers one-five-hundred-and-twenty-fifth part of the absurdities with which Dr. Park's performance overflows, and yet we fear they are "ennuyed." It is the business of a reviewer to point out to readers the works which are worth their reading and those which are not, and we warn all whom it may concern that this "traduction" falls in the latter category. If we have been too severe in our comments we conceive that like him of old, we "do well to be angry," seeing what a monstrous outrage has been done to an unoffending foreigner who might have "recalled" a hospitable "sequestration" to our shores.

Dr. Park, perhaps, is out of court, but his readers may complain that badly as he has served poor Féré the University Press, Watford, has added its contributions to the mess. "Beard has quite properly insisted upon the causes

of terror to which one is exposed in experimentation upon living men," &c. This is a misprint for error. The experiments which have been performed upon Dr. Féré, a living man, by Dr. Park and his printer would surely be a cause of terror to the two latter if the first named worthy gentleman were as bellicose as French writers to the lay press appear often to be.

Of one thing we are sure. Dr. Park has affixed to this work a modest preface of his own, beginning thus:—"A work of importance of Dr. Ch. Féré's *La Pathologie des Emotions* can dispense with the translator's preface, but to put myself into "rapport" with the reader, I venture to explain that I am not only the medium whereby the thoughts and experiments and case records of the great French physician have been done into English; but I homologate his conclusions." We are confident that the specimens of the "English" into which the book is "done" that we have laid before our readers will not aid to bring them into "rapport" with Dr. Park, and we are certain that Dr. Féré (to whom we offer our respectful sympathy) will no more "homologate" this "translation" than Bottom, the weaver, homologated the ass's head when he too was "translated" !

Golden Rules of Psychiatry. By JAMES SHAW, M.D.
"Golden Rules" Series, No. V. Bristol: Wright & Co.
16mo. Pp. 74.

THE series to which this little book belongs describes itself as of waiscoat-pocket size. We, therefore, cannot look for a wealth of detail or beauty of style. The most that we can demand is that clearness be not sacrificed to brevity, and that a due proportion be maintained even in condensing.

The opuscle before us deserves praise under both these heads. Diagnosis, prognosis, treatment, and certification are, on the whole, very judiciously dealt with. The work is of course intended for the general practitioner. As with all such compendiums, some previous knowledge is implied to enable the reader to duly assimilate Dr. Shaw's excellent precepts; but now that all students are required to obtain some

instruction in mental disease, these rules will recall vividly to the mind matters that might otherwise be overlooked. The preliminary rules as to the examination of patients may prove useful even to specialists, and if asylum committees were to supply copies to their assistant medical officers, it might sometimes prevent that jumble of faulty and deficient memoranda, made with an eye to the commissioners' visit rather than with any view to medical requirements, which pass for records of cases in so many asylums.

A System of Medicine by many Writers. Edited by THOMAS CLIFFORD ALLBUTT, M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A.; Regius Professor of Physic in the University of Cambridge; Fellow of Gonville and Caius College; Hon. Fellow Royal College of Physicians of Ireland. Volume VII. London: Macmillan & Co. 1899. 8vo. Pp. 937.

THE completion of this great work comes on apace. This is the seventh volume and but one more is to succeed it. The original design contemplated a series of only six volumes. But Dr. Allbutt tells us in his preface that estimates based on the proportionate parts of the previous English treatises on Medicine, even of the more recent of them, "proved erroneous in the present phase of extraordinary movement and expansion in our art, and in the sciences ancillary to it."

One chief reason for the expansion of the work is that the Editor, in his discretion, decided that the sections on such special subjects as diseases of the larynx, tropical diseases, mental diseases, and diseases of the skin, should be as full and complete as experts in these several departments would require. The enlargement of the work in the direction indicated will make the reader independent of special text-books on the special departments of medicine just named.

Volume VII. is entirely given up to Diseases of the Nervous System. It will be remembered that this great subject was commenced in the sixth volume. It occupies

the whole of the seventh volume, as we have stated, and it is to be finished in the eighth and concluding volume.

The scheme, according to which nervous affections are discussed in the present volume, is as follows:—Diffuse and limited diseases of the spinal cord, diseases of the brain, and finally a group of other diseases having a less definite localisation and a more obscure pathology.

To the last section Dr. Risien Russell is the principal contributor, and needless to say he has done his work right well. His articles are on chorea, the tics, "*paramyoclonus multiplex*," saltatory spasm, head-nodding, and *eclampsia nutans*.

The only title among these which probably requires explanation is that which we have enclosed within quotation marks. It is unfortunately also called "*Friedreich's disease*," but it must not be confounded with hereditary ataxy, described by Professor Friedreich, of Heidelberg, in 1861. The affection, for which Dr. Risien Russell selects the name "*Paramyoclonus multiplex*," was isolated from the chaos of motor neuroses by Professor Friedreich in 1881. It is a motor neurosis characterised by sudden shock-like clonic contractions, usually of corresponding muscles on the two sides of the body; the spasms may be not only symmetrical, but also isochronous. The affection rejoices in nine synonyms. Besides the two already given, we have myoclonus, multiple myoclonus, myoclonus epilepticus, myokimie, myospasia simplex, spinal epilepsy, and convulsive tremor. Dr. Russell says that "*spinal epilepsy*" is a designation to be avoided in describing this affection, as that appellation has long been identified with the clonic spasms which occur in the parts below a destructive lesion of the spinal cord.

Dr. Frederick Taylor is the author of the article on myelitis. In discussing the ætiology of the acute form of this disease, he observes under the heading "cold"—"the modern belief in an almost universal bacteriological pathology would lead us to suppose that the cold acts by depressing the vitality of the spinal cord, and thus rendering it prone to succumb to bacteria or toxins." He reports on the authority of Rosenthal and Thiroloix, a remarkable

case which they regard as demonstrating this connection (*Bull. Soc. Anat.*, April, 1897, page 376).

The caisson disease and hæmatomyelia are the other diffuse spinal affections described in the first part of the volume. The authors are respectively, Dr. Andrew H. Smith, of New York, and Dr. Fred. E. Batten, casualty-physician to St. Bartholomew's Hospital.

Limited diseases of the spinal cord are arranged under the headings sclerosis and nuclear diseases. The writers are Sir T. Grainger Stewart, Dr. Beevor, Dr. Allen Starr, Dr. Risien Russell, Dr. Ormerod, and Dr. Mott, and the Editor, who contributes a short article on senile paraplegia.

Among the authors on diseases of the brain are the familiar names of Ferrier, Bastian, and Byrom Bramwell. The section opens with an able treatise on the experimental pathology of the cerebral circulation by Dr. Leonard Hill, lecturer on physiology at the London Hospital Medical School. No Irish author has taken part in the writing of this volume of the System of Medicine, and this is a matter for regret, not only on grounds of policy, but perhaps even for the sake of the literary and scientific character of the work.

The Schott Methods of the Treatment of Chronic Diseases of the Heart with an Account of the Nauheim Baths, and of the Therapeutic Exercises. Illustrated by W. BEZLY THORNE, M.D., M.R.C.P. Third Edition. London: J. & A. Churchill. 1899. 8vo. Pp. 132.

SINCE we reviewed the first edition of this book in the Journal for June, 1895 (Vol. XCIX., page 485), it has considerably developed both in size and in importance.

In the first place this third edition is illustrated by four plates of radiographs, and a fifth plate containing tracings on paper fixed to the fluorescent screen.

Secondly, there are two entirely new chapters—one on the conditions which should govern the application of the Schott methods, and the other on conditions not primarily cardiac to which the methods are applicable, such as lithæmia, the weak heart of influenza, anæmia, asthma, distension of the stomach, coldness of the extremities, and atheroma.

Thirdly, the old material has been rearranged, and a careful revision of the whole work has been effected.

We can still recommend the book as the best extant guide to the Schott treatment, as practised at Nauheim, and now everywhere.

The Medical Complications, Accidents, and Sequelæ of Typhoid or Enteric Fever. By HOBART AMORY HARE, M.D., B.Sc. With a special chapter on the *Mental Disturbances following Typhoid Fever*, by F. X. DERCUM, M.D.; Clinical Professor of Diseases of the Nervous System in the Jefferson Medical College. London: Henry Kimpton. 1899. 8vo. Pp. 286.

WHAT Dr. W. W. Keen did last year for the Surgical Complications and Sequelæ of Typhoid Fever, Dr. Amory Hare has done this year for the Medical Complications, Accidents, and Sequelæ of that disease. And so, with much propriety, Dr. Hare dedicates his essay to his "honored colleague, W. W. Keen, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery in the Jefferson Medical College of Philadelphia."

The author observes that cases are not infrequently met with in which the manifestations wandered so far from the classical descriptions of the disease under consideration as to be puzzling and obscure. Sometimes also the malady has been so altered in its course by intercurrent affections as to be unusual, and to call forth all the diagnostic knowledge and therapeutic skill of the physician. His essay deals with these aberrant forms of typhoid fever.

After a chapter devoted to general considerations, in which Dr. Hare remarks that the frequency, severity, and mortality of typhoid fever are distinctly on the wane—an encouraging statement, which, however true, unfortunately does not apply to Dublin—the author describes the varieties of onset of the disease. The next chapter deals with the aberrant symptoms, states or complications of the well-developed stage of the disease. Then follow chapters on the complications of the period of convalescence, the conditions

which ape typhoid fever, the duration of the malady, and the immunity to second attacks which it confers.

Dr. Dercum's essay—for such it is—on the mental complications of typhoid fever forms the seventh and concluding chapter in the book. According to the author post-typhoid insanities may make their appearance in one or other of the following forms:—(1.) Acute delirium. (2.) Confusional insanity, stuporous insanity. (3.) Cerebral asthenia, pseudo-dementia, pseudo-paresis. (4.) Insanity with systematised delusions resembling paranoia. (5.) True melancholia or true mania.

In concluding a very readable account of the mental states in typhoid fever, Dr. Dercum alludes to the remarkable fact that, in quite a large number of cases of insanity, an attack of typhoid fever is followed by recovery of mental health, irrespective of the special form of insanity. In other cases long-continued improvement ensues. “The interesting fact of recovery of insanity after typhoid fever is comparable to the effects of other infectious processes, such as erysipelas, and also to the results occasionally following trauma and surgical operations on the insane.

In his work, Dr. Amory Hare has given to the literature of typhoid fever a valuable contribution, and has added to the reputation of the great American School of Medicine.

Text-book of Obstetrics. By BARTON COOKE HIRST, M.D.;
Professor of Obstetrics, University of Pennsylvania.
With 653 Illustrations. Philadelphia: The Rebman
Publishing Co. 1899. 8vo. Pp. 820.

WE do not know whether the author or the publishers of this book are to be the more congratulated; the former for having written a work which sets a standard of excellence for future writers, the latter for the artistic manner in which it is presented to the public.

Amongst the numerous good plates and illustrations in which the book abounds we notice many old friends which have already appeared in former works emanating from the same firm.

As is usual in obstetric text-books, this one commences with

a description of pelvic anatomy and embryology. Beyond the fact of these sections being excellently illustrated, there is nothing particular to note about them.

The development of the ovum as next described leaves little to be desired, and the subject is brought well up to date.

Chapter V. deals with foetal diseases, great prominence being given to syphilis in this connection. The importance of this hereditary taint cannot be exaggerated, and yet the author is one of the few text-book writers who has dealt adequately with the subject.

We wish to particularly call attention to Plate III., which beautifully portrays the evidence of epiphyseal syphilitic inflammation. This inflammation is a certain, though rarely looked-for, indication of the disease. On the other hand, Fig. IV. can hardly be said to be a happy illustration of the complaint.

The kidney of pregnancy is contrasted in a tabulated form with that of chronic nephritis on p. 228. This, we imagine, will delight the hearts of students reading for any of the higher obstetrical examinations.

Abortions are still classified, we observe, in the time-honoured manner—namely, threatened and inevitable; and, following the lead of others, appropriate treatment is advised for each stage. We would not be concerned to notice this almost universal classification were we not aware that in practice it has exercised a pernicious influence. Those moulding their treatment on this classification must frequently face the crux as to whether a threatened or an inevitable abortion is at the moment being dealt with. This question is frequently hard to settle, while to make a mistake in the diagnosis might well lead to disastrous consequences, for the lines of treatment pursued under each condition differs widely the one from the other.

How much more simple than this is it to follow the rule laid down in the teaching of the Rotunda Hospital, and consider all cases as of the threatening variety until either the ovum is expelled or circumstances arise which endanger the mother's life. These circumstances will call for active treatment quite irrespective of other possibilities. More-

over, we do not hold that to tampon the vagina is the safest and readiest means of emptying the uterus.

Pages 347-8-9 give full directions to both mother and nurse as to their parts in the management of the lying-in state.

When dealing with either accidental hæmorrhage or with placenta prævia, the Dublin methods wholly differ from those advised by the author; and we would especially warn our readers against efforts directed towards the dilatation of the cervix with the fingers in the latter complication. The cervix is often rotten to a remarkable degree in placenta prævia, and tears like wet paper under the exercise of small force, with the result that severe, and sometimes uncontrollable hæmorrhage follows. We can call to mind one fatal result from this accident, while literature abounds with similar cases.

Puerperal sepsis may be picked out as one of the many instructive articles in this book. There is much comparatively new work recorded here, while those interested in serum therapy can, with advantage, study the subject in this book.

A chapter on children, the injuries to which they are liable during parturition as well as some of the more common complaints of the new-born, brings this valuable work to a conclusion.

The Practice of Obstetrics. By American Authors. Edited by CHAS. JEWETT, M.D. With 441 Engravings and 22 full-paged Coloured Plates. London: Henry Kimpton, Publishers. One Volume. 1899. 8vo. Pp. 763.

THE above heading indicates to some extent that the handsome volume before us is one of no ordinary merit. Dr. Jewett deserves much praise not alone for his choice of contributors but also for the care he has shown in apportioning each their section in so judicious a manner.

The work covers the whole subject of Obstetrics, and is wonderfully free from the usual faults so often observed in books compiled from the pens of many authors. It can be read without the fear of encountering needless repetitions or tedious elaboration, not infrequently encountered in the

writings of those to whom uncongenial sections have been allotted.

Of the contributors all have done their work well, and it would be invidious to select any one in particular for praise, while to review the writings of each one of the nineteen would be a task beyond the limits of our allotted space.

There is no doubt that this work will find much favour and be eagerly studied by both the student and the practising physician, while the library of the specialist cannot be said to be complete without it.

A Short Practice of Midwifery. By HENRY JELLETT, M.D. Dublin; F.R.C.P.I.; late Assistant-Master, Rotunda Hospital. London: J. & A. Churchill. 2nd Edition. 1899. Pp. 381.

THE appearance of a second edition of this excellent work in so short a space of time since its original publication, is sufficient proof that our former estimate of its usefulness has been fulfilled.

Dr. Jellett has been fortunate in obtaining much help from Dr. A. V. Macan in this his second edition, and to this he bears willing testimony in his Preface.

The work has been improved in many respects. The subjects dealt with are better arranged. The faults of style are eliminated, while the errors, almost inseparable from first editions, are now conspicuous by their absence.

We strongly recommend this book, in particular, to those who have been debarred by circumstances from obtaining some portion of their obstetric training in the Rotunda Hospital.

Glasgow Hospital Reports. Edited for the Committee by G. S. MIDDLETON, M.D., and H. RUTHERFURD, M.D. Volume I. With 65 illustrations. Glasgow: J. MacLehose & Sons. 1898.

IN May, 1896, a number of Glasgow medical men, mostly members of the staffs of the various hospitals, decided to establish an annual volume of hospital reports. Circum-

stances delayed the appearance of the first volume, but it is intended to issue it regularly every year in future.

We can warmly congratulate the Editors and Committee upon the excellence of their "Reports." The book strikes us as being about the best of the works of its kind that we have seen. Many of the articles in it are not merely records of cases, but careful monographs on various subjects which show evidence of original work and laborious investigations.

Dr. Robertson contributes a paper on "Percussion and Auscultatory Percussion of the Skull in Diagnosis and Treatment." He finds that by percussing the skull with the point of the finger with a degree of force incapable of causing pain elsewhere, pain may be caused when the percussion is practised over an area of disease, whether the disease exists in the inner table of the skull, in the membranes, or in the brain. He also calls attention to the note elicited by percussing the skull, and heard through a stethoscope applied over the frontal suture. This note is modified by excess of liquid in the skull, and by other conditions which modify the conduction of vibrations along the bones.

Dr. Newman is the author of a carefully written and well illustrated paper on "Malformations of the Kidney." He classifies them under three heads:—1. "Displacements without Mobility;" 2. "Malformations;" and 3. "Variations in Pelvis, Ureters, and Blood-vessels." There are many sub-divisions of these heads. Altogether the paper is an excellent one.

One of the best articles in the book is that on "Urinary Asepsis," by Dr. Nicoll. It is divided into two parts. In the first he investigates the possibility of sterilising the various forms of bougies and catheters in use. As regards bougies, they are comparatively easy to render aseptic; ordinary careful washing, followed by careful drying with a sterilised towel, will suffice, if only the surface of the instrument is free from cracks or chips. On the other hand, catheters—except those of metal and of red rubber, which can be boiled—are very difficult of disinfection. He gives the results of a laborious series of investigations, which will well repay perusal. The second part relates to the presence or absence in the urethra of bacteria, but as the investigation is not yet

completed Dr. Nicoll reserves his conclusions for a further communication.

Dr. Steven has an important contribution to the "Pathology of the Coronary Arteries of the Heart." His statistics show that disease of these vessels is a frequent factor in the causation of sudden death and of angina pectoris, but that, on the other hand, they are often seriously diseased without causing either of these phenomena.

There are other papers which are well worth reading.

We warmly congratulate the Glasgow Hospital Staffs on these Reports.

The Pathologist's Handbook. By T. N. KELYNACK, M.D., M.R.C.P.; Pathologist to the Manchester Royal Infirmary, &c. London: J. & A. Churchill. 1899. 8vo. Pp. 186.

In writing a concise manual on *post-mortem* technique Dr. Kelynack has certainly endeavoured to supply students with a much-needed handbook, and has, moreover, undertaken one of the most difficult tasks an author can set himself to—namely, condensing a big subject into a small space. The result of his labours is rather disappointing, because by introducing a quantity of useless and irrelevant pictures he has been compelled to treat in a few words some of the leading points of *post-mortem* examination. We shall consider the various chapters in order, as far as possible.

The first two chapters are more or less introductory, and contain one very excellent piece of advice on the washing and disinfecting of one's hands, sadly neglected by some pathologists, who seem to feel a pride in filthy hands and untidy dress.

The third chapter is a description of *post-mortem* instruments, with illustrations from Weiss' catalogue—twenty-eight pages wasted, when we consider that nearly four whole pages are used up in depicting ordinary scalpels and magnifying lenses, with which every student is quite familiar.

The fourth chapter, on external examination of the body and its surroundings, is good, especially from a medico-legal standpoint; but in the last paragraph there is a very elementary mistake made in the confusion of the terms "*post-*

mortem staining" and "*post-mortem* lividity," which the author uses as synonymous.

The fifth chapter gives a general outline of the examination of the thorax and abdomen. He first opens the abdomen and directs that the recti be detached from the os pubis, and, if necessary, divided again higher up, omitting to mention that this is done merely to give more room. "The thorax is now to be opened, and a wider view given of the abdominal cavity." He has as yet made no examination of the abdomen, and the moment the "operculum" is removed and diaphragm cut through the relations of the abdominal organs are completely changed, a point Virchow lays such stress on, to say nothing of an empyema flooding the whole cavity. Two whole pages are again wasted, one with an anatomical plate and another with "Transpositions of the Viscera"!—space that can ill be spared, and which might well have been used to describe properly, if briefly, the method of inspecting the abdomen and thorax.

The sixth chapter deals with the detailed examination of the thoracic viscera. The author gives here a good and simple method of opening the heart as an alternative for Virchow's, but introduces an element of difficulty into the latter by failing to point out Virchow's guiding incision into the right ventricle, which gives the plane for all the others, and is a perfectly simple method. The pictures here again, as indeed throughout the entire book, are, for the most part, worthless—first, because they try to illustrate special pathological features; and secondly, because they fail hopelessly in the attempt. Who, for instance, could ever tell that Fig. 55 was melanotic sarcoma of the heart, or that Fig. 109 was a cirrhotic liver? The advice to remove organs *en masse* for later dissection is not good; it is often a necessity, as circumstances will not permit the dissection of parts *in situ*, which is, of course, far better. A good point in examining phthisical lungs in hæmoptysis cases is the method of injecting the pulmonary vessels with water. The direction for avoiding the cutting of the pulmonary valve is another good point.

The next chapter, on examining the abdominal viscera, starts with removal of the intestines, but no mention is made

of the most important point to consider in doing this—viz., holding the knife-blade at right angles to the gut. The method of examining the male genito-urinary tract is a very good one, but far too briefly described. When stomach and duodenum are opened *in situ*, as is usual, everything else except the liver should be removed first, as it is impossible to prevent soiling.

The examination of the brain and cord would be one of the best chapters in the book if some useful diagrams were substituted for the anatomical plates, which are absolutely out of place here.

The chapter on special examination gives useful advice on examining bones. The rest of the chapter gives too scanty a description of medico-legal examination to be of any value to anybody.

The next chapter is forensic medicine not pathology.

The final chapter contains some very useful advice as to the "Restitution of the Body," but might very well have been supplemented with a somewhat further account of modern methods for preserving specimens.

The American Year-book of Medicine and Surgery: being a Yearly Digest of Scientific Progress and Authoritative Opinion in all branches of Medicine and Surgery, drawn from Journals, Monographs, and Text-books of the leading American and Foreign Authors and Investigators. Collected and arranged, with critical editorial comments, under the general editorial charge of GEORGE M. GOULD, M.D. Illustrated. London: The Rebman Publishing Co., Ltd. 1899.

THIS huge year-book consists of 1,100 pages of large octavo size. It is well printed in large, clear type, so that it is easy to read—no small advantage in a medical book.

The twenty-nine sectional editors are gentlemen of recognised standing in their several specialties, and bear names that command respect. As Dr. Gould states:—"The editorial staff continues the onerous duty of previous years with that expertness of intelligence in gleaning and ripeness of judgment in deciding as to values which can only

be gained by experience and knowledge, and which are prime essentials." Only by these qualities can the practitioner be certain that the collection shall not omit or exaggerate the importance of any contribution, and, most needful of all, that it shall not be a mere undigested gathering of "all and sundry," leaving the physician, too busy for much reading, undecided and dazed, as if by a multitude of clamorous voices.

The able staff that Dr. Gould has gathered round him in the work have accomplished their task well, and year after year the book grows in favour with the profession as a trustworthy book of reference.

The Year-book of Treatment for 1899: a Critical Review for Practitioners of Medicine and Surgery. Illustrated. London, Paris, New York, and Melbourne: Cassell & Co., Limited.

FOR fifteen years this concise year-book has held its own in popular favour. For this success it is largely indebted to the careful editing that secures for the practitioner all that is desirable and excludes all padding. Each section of the manual is not alone a good summary of the progress of medicine in its own province, but it is also a criticism on the same by an acknowledged authority.

The present number contains an article on the open-air treatment of phthisis by Dr. Burton-Fanning, who has had practical experience of the method at Cromer.

On the Study of the Hand for Indications of Local and General Disease. By EDWARD BLAKE, M.D. London: Henry J. Glaisher.

DR. BLAKE, in this little monograph of forty pages, has gathered together an immense mass of well-arranged facts, and gives the profession a very useful little pamphlet.

He commences with a description of the temperature, dryness, moisture, and tremor of the hand, and passes on to consider the colour and texture. The nails, their form, colour, distortion, and disease follows, and in the succeeding

chapters he deals with the diseases of the hand—parasites, eruptions, papillomata, and so forth.

The pamphlet is a good example of how much a careful observer and well-trained physician may learn by examining even a small part of the body of a patient.

Skiagraphic Atlas of Fractures and Dislocations. With Notes on Treatment for the use of Students. By DONALD J. MACKINTOSH, M.B.; Medical Superintendent, Western Infirmary, Glasgow. London: H. K. Lewis. 1899.

THIS atlas contains eighty plates, of which some twenty are not properly described under the term “Skiagraphic Atlas of Fractures and Dislocations.” The book is splendidly brought out, and looks at first sight as if it would be too dear to take its place as a student’s manual, as its title and preface both suggest. We find, however, that its price is very moderate (12s. 6d.), and our wonder is how it can be sold so cheaply. The skiagraphs of the fractures of the limbs are very clear and beautiful, but we cannot say this of the representations of lesions of the hips and pelvis. It seems that, even with most skilful workmanship, the thick and restless structures of the living trunk are but little accessible to the X-rays. The “brief descriptive notes” are brief indeed, not more than four hundred and sixteen lines in all. Although the author must have had plenty of opportunities for obtaining the histories of the accidents which produced the fractures photographed, he has in very few cases given any note to help the student to associate the type of fracture with the character and direction of the force which produces it. In Plates XIV. and XV. a very remarkable deformity of the radius is shown—a fracture united with great angular deformity. The note which accompanies it is the following:—“Greenstick fracture of the radius (anterior view). The patient was eight years of age, and had received an injury to the forearm four years previously, but no deformity was observed till three months after the injury. Movements of pronation and supination were impaired. Treatment: Osteotomy and straightening the bone. Partial resection may be required.”

We have quoted the whole note to allow our readers to judge of its value. We would ask whether the late discovery of marked deformity justifies the diagnosis of greenstick fracture? We think the author would have published a more useful book if he had omitted the letterpress.

We notice a new word introduced into the English language in these brief notes:—"Nothing can be done here to remedy the shortening of the limb, but the deformity might be lessened by chiselling or sawing off the prominent end of the upper tibial fragment, and, having *rawed* the lower fragment, wiring the bone."

RECENT WORKS ON NURSING.

1. *Nursing: its Theory and Practice.* Being a complete Text-book of Medical, Surgical, and Monthly Nursing. By PERCY G. LEWIS, M.D., M.R.C.S., L.S.A., A.K.C. (Folkestone). Thirteenth Thousand. Enlarged and Revised throughout. London: The Scientific Press. 1899. 8vo. Pp. 427.

2. *A Handbook for Nurses.* By J. K. WATSON, M.D. Edin. London: The Scientific Press. 1899. 8vo. Pp. 413.

1. WE may preface our remarks by congratulating nurses upon the marked advance made in the text-books intended for their use. Those now before us enter into detail and the "reason why" in a satisfactory manner which will be appreciated by the nurse who often spends ill-spaced hours seeking information she yearns for from mighty tomes too scientific and classical for practical purposes, as far as she is concerned. Here all she needs, or probably seeks for, is condensed and arranged for easy reference. Of Dr. Lewis's book we cannot speak too highly; it is up to date in every particular, including mental nursing, Nauheim treatment, and massage, and is more than double the size of the first edition, published in 1890.

2. Dr. Watson's handbook should be on every nurse's shelf for the practical instruction it affords in cases both medical and surgical, given in fullest detail of symptoms, treatment, and application.

In both these works a more even balance of responsibility between doctor and nurse is advocated than we have hitherto met with—a step in the right direction, from which both professions will benefit. Deeper insight and acknowledgment will lead to more intelligent obedience, and get more enthusiastic work from the true and helpful woman, who alone should aspire to become a nurse.

The Wasting Diseases of Infants and Children. By EUSTACE SMITH, M.D., F.R.C.P.; Physician to His Majesty the King of the Belgians; Senior Physician to the East London Children's Hospital, and to the City of London Hospital for Diseases of the Chest. Sixth Edition. London: J. & A. Churchill. 1899.

THE issue of the sixth edition of this well-known work will be hailed with satisfaction. No English physician is so well entitled to write on this subject as Dr. Eustace Smith. Dealing with, perhaps, his favourite subject, Dr. Smith herein embodies the results of his life-long experiences amongst sick children. After an introduction of some fifteen pages the reader is presented with separate complete essays on the following diseases:—1. "Infantile Atrophy," or Marasmus; 2. "Chronic Diarrhœa;" 3. "Chronic Vomiting;" 4. "Rickets;" 5. "Inherited Syphilis;" 6. "Mucous Disease;" 7. "Worms;" 8. "Tuberculosis;" the volume concluding with a chapter on "The Diet of Children in Health and Disease."

This is eminently a book for physicians, being beyond the scope of most students, and for clinical study in an out-patient department or children's ward. No volume will be found to treat better, if as well, the subjects tabulated above. It costs only six shillings.

There is a learned and beautiful description of "rickets" in Chapter IV. Dr. Smith very properly points out that rickets is not merely a disease of the bones, but one which affects the tissues of the body very widely:—"The disease occurs amongst the children of the rich as well as amongst the poor, for wealth cannot buy judgment, and education is no guarantee against foolish indulgence. We know that a

child may be in reality starving although fed every day upon the richest food, for he is nourished, not in proportion to the nutritive properties of the food he swallows, but in proportion to his ability to digest what is given to him. If, therefore, he be supplied with food which is unsuited to his age, the result is the same whether he live in a palace or a cottage."

"Rickets does not produce malnutrition, but malnutrition produces rickets." "By judicious treatment it may be stayed at any point of its career, and the treatment required is merely food—food which nourishes, and drugs which are not so much medicines as food under another name."

The other essays are equally interesting.

This volume is another proof of what has been before insisted upon in this Journal—viz., that children die from *medical* diseases, that surgery has little or no part in the prevention of infantile mortality, and that hospitals for sick children should be mainly devoted to medical work. Rickets is an entirely preventable disease, and, if taken in time, is cured without difficulty; by the time it reaches the surgeon irreparable damage has been done.

We most highly commend the distinguished author on the appearance of this scholarly treatise upon some of the most difficult clinical problems in medicine, and recommend earnest investigators to consult its pages on the above intricate diseases of children.

The Guide to South Africa. For the use of Tourists, Sportsmen, Invalids, and Settlers. With Coloured Maps, Plans, and Diagrams. Edited annually by A. SAMLER BROWN and G. GORDON BROWN, for the Castle Mail Packets Company, Limited, 3 & 4 Fenchurch-street, London, E.C. 1899-1900 Edition. Seventh Edition. London: Sampson Low, Marston & Company, Limited; Cape Town, Port Elizabeth, and Johannesburg: J. C. Juta & Co. 1899.

THE seventh edition of this useful and popular handbook, issued in September, 1899, has been entirely revised. All

data available at the end of July have been incorporated with the text, and the necessary alterations have been made in the very complete series of coloured maps.

The work does not pretend to be merely a "Guide" in the ordinary sense of the word, but adds to the information usually given in a traveller's *vade mecum* a mass of condensed and statistical matter bearing on South Africa generally. This cannot fail to prove both interesting and instructive at a time when the fate of what may be called the South African Empire hangs in the balance. In connection with the present crisis we have repeatedly had occasion to consult this work, and never in vain or without profit. It is marvellously cheap, costing only half a crown.

ROYAL COLLEGE OF SURGEONS, EDINBURGH.

At the annual meeting of the College, on October 18th, 1899, Dr. James Dunsmure was unanimously elected President for the ensuing year, and the following gentlemen, having passed the requisite examinations, were duly elected Fellows of the College:—Francis Horatio Amner, L.R.C.S.E., Tongkah, Siam; Nathaniel Thomas Brewis, F.R.C.P.E., Edinburgh; Arthur Mayers Connell, M.R.C.S. Eng., Sheffield; George Aubrey Jelly, M.R.C.S. Eng., Sunderland; Robert Holbourne William Johnston, L.R.C.S.E., Maidstone; John Norman Macleod, M.B., C.M., Glasg., Indian Medical Service; Robert Henry Parry, L.R.C.S.E., Glasgow; Henry Carden Pearson, M.B., C.M., Edin., Darlington; John Connel Ramsay, L.R.C.S.E., Peebles; Donald Ferdinand Schokman, L.R.C.S.E., Colombo, Ceylon; John William Struthers, M.B., Ch.B. Edin., Edinburgh; and Andrew Hutton Watt, M.B., C.M. Edin., Edinburgh.

HYSTERIA IN A CAT.

A NINE-MONTHS' old kitten, very fond of play, was one day bitten in the back by a dog. Thereafter it dragged its hind legs, and did not move its tail, just as if the cord had been crushed. Later it fell from the first story of the house. It was instantly cured and used its legs and tail as well as ever. It is evident that the shock of the fall produced a psychic effect sufficiently powerful to overcome the idea of paralysis. That the trouble was only a hysterical paralysis was further shown by the preservation during the whole time of the functions of bladder and intestines.—*Medical News*, June 3, 1899.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

*The Achievement of the Mens Medica.** By JOHN WILLIAM MOORE, M.D., Dubl., P.R.C.P.I.; Physician to the Meath Hospital and County Dublin Infirmary.

INTRODUCTORY.

THE whirling years assign to me once more the honourable task of opening the Clinical Session at the Meath Hospital and County Dublin Infirmary.

Exactly twenty-four years have passed since it was my privilege, then a neophyte of six months' standing on the Medical Staff, to trace the medical history of the Meath Hospital from its opening on March 2, 1753, to the resignation on April 1, 1875, of William Stokes, a man

“Of very reverend reputation, sir,
Of credit infinite, highly beloved,
Second to none that lives here in the city.”

—*Comedy of Errors*, v. 1.

HOSPITAL IMPROVEMENTS.

Were that great and good physician now to revisit this scene of his earthly labours for forty-nine years, he would much rejoice to find that the lessons he taught as to the prevention, not less than the cure, of disease, have borne ripe fruit in the hospital he served so faithfully and loved so well.

We can point with pride to the isolation hospital which has been erected on our grounds within the last few years for the treatment of infectious fevers; to the modern operation theatre, which has already proved an invaluable boon; to the admirable drainage system of the hospital buildings; and to the remodelled and enlarged laundry, with its splendid machinery, now utilised to heat the theatre and to supply hot water to all parts of the hospital.

Although any statement relative to the Operation Theatre would

* An Address introductory to the Session of 1899–1900, delivered at the Meath Hospital and County Dublin Infirmary on Monday, October 9, 1899.

come more appropriately from the lips of one of my surgical colleagues, I cannot but allude to the work done in it since its opening on October 1, 1898. The Report of the Hospital for the year ended March 31, 1899, states that the new theatre has been built on a higher level than the old one, and is in direct communication with the surgical landing, so that patients are now simply wheeled from the wards into the theatre, and back again to the wards on the completion of the operation. In the theatre itself the aim has been to combine simplicity with perfection of detail in carrying out as thoroughly as possible all the requirements of modern aseptic surgery. Arrangements have been perfected for a constant supply of boiling and cold sterilised water; and heating is effected by means of steam radiators, so that the severest abdominal operations can be performed at a temperature of 70° F., even in mid-winter. The floor consists of marble mosaic, and the walls are built of specially prepared cement, so that the whole area can be thoroughly washed and disinfected both before and after use. No porous or dirt-retaining fittings have been used, and the dust from the students' boots, clothes, &c., is prevented from reaching the field of operation by glass screens running round the galleries. Since its opening, now twelve months ago, operations have been performed in the theatre day after day, without a single mishap or a single instance of septic infection. This fact alone shows the perfection of detail with which the arrangements were planned, and the conscientious care with which they have been carried out by the Surgical and Nursing Staffs.

In connection with the Surgical Department of the hospital also, a new male accident ward, containing twelve beds, has been erected on the site of the old operating theatre. This spacious and cheerful ward has been fitted with separate bath-room, lavatory and closets. It is lofty and admirably ventilated and lighted; it has been supplied with every requisite for the benefit and comfort of the patients. Provision has been made in the old ward for the isolation of patients affected by septic conditions, or offensive cases likely to contaminate a ward.

Of the accommodation for infectious cases, I need say but little. The "West Wing" is doing noble work during the present season in the matter of the treatment of the epidemics which have visited Dublin this autumn—measles and typhoid fever. In our Epidemic Wing we are able to accommodate some 40 patients with safety to themselves and to the public health. From what has been stated, it is clear that no expense or pains have been spared to make the

Meath Hospital a fully-equipped School of Clinical Medicine and Surgery in the modern sense.

THE LOCAL GOVERNMENT ACT, 1898.

The past year has, in another direction, been a noteworthy one in the history of the hospital. Founded in 1753, the Meath Hospital was, in 1774, constituted the County Dublin Infirmary by Act of Parliament, and received from the Grand Jury accordingly a presentment of £100 per annum. This brought the hospital under the operation of the Local Government Act, 1898. Section 15 of this measure provides that "every County Infirmary shall be managed by a Joint Committee, appointed triennially, consisting of such number of Members of the Corporation of the Governors and Governesses of the Infirmary appointed by the corporation, and of such number of members of the County Council, as the Local Government Board from time to time fix in the case of each infirmary." Letters have been received from the Secretary of the Local Government Board, stating that that Board had fixed the number of members of the Joint Committee for the management of this Infirmary for the next three years at twenty-three—viz., one representative of the Corporation of the City of Dublin, three representatives to be appointed by the County Council of Dublin, and nineteen representatives to be appointed by the Governors and Governesses of the Infirmary.

The new Joint Committee will doubtless work with a single eye to the best interests of the institution which has thus been entrusted to its care. Its representative character should entitle it to public confidence. But, if it is objected that the Corporation and the County Council are not sufficiently represented, the remedy is simple—let those bodies double their contributions, and at the next triennial election their representation will be proportionately increased.

PROPOSED NEW LUNG FOR THE HOSPITAL.

There are still, in my opinion, two directions in which generous donors might benefit the hospital. One is in the matter of the purchase of a waste piece of ground to the westward of the hospital extending from Williams's-place to the rear of Lower Clanbrassil-street. If it were once the property of the "Governors and Governesses," together with the intervening row of cottages in Williams's-place, we should have secured as fine an open space or "lung" on the west, as that which already exists on the east, side of the hospital.

A NURSING HOME.

Perhaps a still more pressing need is the erection of a Nursing Home in the vicinity of the hospital, and the establishment of a Training School for Nurses under the immediate control and management of our own Committee. A properly managed and efficient Nursing School and Home would in a comparatively short time prove a source of profit, and be a benefit to the institution. Far be it from me to underrate or decry the invaluable services rendered to the sick and suffering treated in our wards by the Red Cross Sisters and Probationers, with Sister Ellinor Lyons at their head. But the existing system leaves much to be desired in regard to finance, control, and repute as a School of Sick Nursing. I trust that the closing year of the Nineteenth Century—the year of our Lord, 1900—will witness the realisation of the two schemes of improvement I have ventured to suggest. In the proposed Nursing Home provision should be made for a Lecture Theatre, of which the hospital is sorely in want. A suitable site would be the plot of ground west of the hospital, to which reference has just been made.

THE NOBLENES OF MEDICINE.

Gentlemen, members of the Medical and Surgical Class of the Meath Hospital, to you especially shall my brief words on this occasion be addressed.

Many of you are to-day standing upon the threshold of your life-work—and a very solemn life-work it is. “Medicine,” said the late Sir Andrew Clark in one of his many addresses to students, is “the metropolis of the Kingdom of Knowledge.” “You have chosen,” said he, “one of the noblest, the most important, and the most interesting of professions, but also the most arduous and the most self-denying, involving the largest sacrifices and the fewest rewards. He who is not prepared to find in its cultivation and exercise his chief recompense, has mistaken his calling, and should retrace his steps.”

The issues at stake in the practice of the Medical Profession are indeed momentous. To the physician are for the time being, in a measure, committed the balances of life and death; the joys and sorrows of humanity pass daily in a pageant before his eyes; to him are entrusted secrets, the revealing of which might blast a reputation or snap the thread of life. He is the confidant of manhood, the trusted champion of womanhood, the friend of little children. His part it is to tell of approaching death when his skill has failed to save life—oh! let him act this tragic part with tender-

ness and loving sympathy, lest his words should wound like barbed arrows, rather than soothe like the "balm of Gilead." When the prophet of old sought to describe the desperate state of his nation, he uttered the plaintive words—"Is there no balm in Gilead? Is there no physician there? Why then is not the health of the daughter of my people recovered?"

THE "MENS MEDICA."

Such being the dignity and the responsibility of our profession, surely we should approach its portals with bated breath and reverent mien. I do not urge that the physician should be an ascetic. The very solemnity of our work forbids this, and counsels recreation as a foil to the stern realities of our daily life. The best physician is the man who, daily witnessing the havoc wrought around him by the hand of Death, from his experience forms the habit of acting with a constant view to death, and develops the earnest desire to shield from its stroke the sick entrusted to his care. "Perception of distress in others," writes Bishop Butler in *The Analogy of Religion*, "is a natural excitement passively to pity, and actively to relieve it; but let a man set himself to attend, inquire out, and relieve distressed persons, and he cannot but grow less and less sensibly affected with the various miseries of life, with which he must become acquainted; when yet, at the same time, benevolence, considered not as a passion, but as a practical principle of action, will strengthen, and whilst he passively compassionates the distressed less, he will acquire a greater aptitude actively to assist and befriend them."

This is the "Mens Medica," which endows the true physician with the God-like power of healing. His compassion, observation, experience, reason, and learning are all enlisted in a self-denying and supreme effort to combat disease and to ward off death.

Fellow-students of the Hospital Class, it needs no words of mine to show you that the "Mens Medica," of which I speak, is a possession not to be lightly won, but to be highly prized. It is, as it were, the Golden Fleece which you, the Argonauts, must win through many trials and temptations, through many perils by land and sea. My task, in the few moments allotted to me on this Red Letter Day of a new Session, is to point how best this prize may be achieved.

CLINICAL CASE-TAKING.

With much concern the physicians of the hospital have observed that for some years back—especially since the institution of a fifth

year of medical study—students have been inclined to pay less attention to their clinical work than was hitherto their custom. They still “walk” the hospitals, but their attitude has become less actively attentive than of old. When it was not compulsory to “take cases,” cases were taken as they should be taken—that is, the patients were visited twice a day, and every symptom and turn of their illness were noted. Now, I do not for one moment wish to belittle the teaching in our Schools of Medicine. A liberal general education and a sound knowledge of the ancillary sciences are essential elements in the evolution of the physician or the surgeon. But the paramount use of these aids to a professional training is to enable the medical student rightly to observe and study disease—and this crowning work of medical education can be pursued only at the bedside of the sick—there alone can “the ways of the sick” be learned. In my first Address, delivered in 1875, I quoted Robert James Graves on this point. With your permission, I shall quote him again. In his first introductory lecture after his appointment as Physician to this hospital in 1821, he wrote:—“From the very commencement the student ought to witness the progress and the effects of sickness, and ought to persevere in the daily observation of disease during the whole period of his studies.” He continues:—“A great number of students seem little, if at all, impressed with the difficulty of becoming good practitioners; and not a few appear to be wholly destitute of any prospective anticipation of the heavy, the awful responsibility they must incur when, embarking in practice, the lives of their fellow-creatures are committed to their charge. It is by persons of this description that the earnest attention and permanent decorum which ought to pervade a class employed in visiting the sick are so frequently interrupted. Young men of the character to which I allude attend, or, as it is quaintly enough termed, *walk* the hospitals very regularly, but they make their appearance among us rather as critics than as learners—they come, not to listen, but to speak—they consider the hospital a place of amusement rather than of instruction. Students should aim not at seeing many diseases every day; no, their object should be constantly to study a few cases with diligence and attention; they should anxiously cultivate the habit of making accurate observations. This cannot be done at once; this habit can be only gradually acquired. It is never the result of ability alone; it never fails to reward the labours of patient industry. You should also endeavour to render your observations not only accurate, but complete; you

should follow, when it is possible, every case from its commencement to its termination, for the latter often affords the best explanation of previous symptoms, and the best commentary on the treatment."

In some degree, the languid case-taking of the present day is due to the active training of nurses and probationers which goes on in our wards. Our neat Clinical Charts are filled in by the probationers who are trained to take observations on the temperature, the pulse rate, and the rate of breathing. But this should not interfere with the case-taker's records—quite the reverse, for a second series of observations would control the first. Speaking with more than thirty years' experience as both student and practitioner, I assert with all the emphasis at my command that the student who neglects his clinical work, or carries it out in a half-hearted and perfunctory manner, will bitterly regret his lost opportunities in after-life. Sooner or later, with much searching of heart and with many a misgiving, weighed down by a full sense of undivided responsibility, he will have to strive after that ripe experience which was within his grasp while yet a student, when he could share all responsibility with his teachers, and was sheltered beneath the ægis of their position.

The apologist of the medical student will urge that so many new subjects have been added to the curriculum and examinations that he has no time for hospital practice. To this apology there is a threefold answer—(1) A fifth year has also been added to the curriculum; (2) the additional subjects are necessary if he is to be an "up-to date" physician and surgeon; (3) their study renders hospital work at once easy and fascinating.

THE ADVANCE OF MEDICINE.

Medicine and Surgery have advanced within the past quarter of a century by leaps and bounds. Almost precisely twenty years ago, on November 3, 1879, it was my lot to deliver the Address introductory to the session in this hospital, and I chose as my subject "The Microcosm of Disease." The term "Bacteriology" was not then in use, but it was what I meant. Look how rapid and how conducive to the welfare of mankind has been the march of knowledge in regard to the bacterial origin of disease. Think of the triumphs of modern aseptic Surgery, more glorious because more beneficent than any triumphs the world ever saw before.

Nor has Medicine lagged behind. Day by day we are learning more of the intimate nature of contagion in relation to the infective

diseases ; our diagnostic powers have been reinforced by microscopic investigation of stained bacteria, by observation of the altered behaviour of certain pathogenic micro-organisms in the presence of infected blood—witness the Widal test for typhoid or enteric fever ; and one fell disease at least has been robbed of its terrors by the serum or antitoxin treatment—namely, diphtheria.

THE FEVER PROCESS.

The nature of the fever process is now far better understood than it was even a few years ago, and we have learned that “fever,” or elevation of bodily temperature above the standard of health, or “normal,” serves a useful purpose, provided that it is properly controlled. There is, in fact, what the Germans aptly call “*das Heil-Fieber*”—“the fever which brings back health.” At the close of an able Address on “Antipyresis” before the Tenth International Medical Congress at Berlin, in 1890, Professor Arnaldo Cantani, of Naples, used the memorable words—“*Das Fieber, das in so vielen Krankheiten der beste Verbündete des Arztes ist*”—“the fever, which in so many diseases is the best ally of the physician.” Fever, in a word, purges the system. In an excellent article on Typhoid Fever, written in the present year, Drs. Affleck and Ker, of Edinburgh, say—“The ordinary fever of a typhoid case runs such a fixed and definite course that it is hard to believe that the pyrexia is not Nature’s cure for the disease.”

In this mixed assembly of laymen and members—actual or presumptive—of the medical profession, I would raise a warning voice against the pernicious doctrine that in fevers the temperature must be reduced as quickly as possible to what is popularly called “normal.” It cannot be too often or too emphatically and authoritatively declared that such a procedure is very likely to destroy life. The so-called antipyretic medicines, or heat-reducers, should never be used by unskilled hands. The employment of such remedies, even by the skilled physician, calls for the utmost caution and the most anxious consideration. The danger lies in an interference with the production of body-heat, while the escape of heat from the system is increased. In this way collapse is likely to be induced. For many years I have taught that the only safe antipyretic, or assuager of fever-heat, is water, and especially cold water. It helps the escape of heat from the body in many ways, while it does not interfere with heat production—rather, indeed, does the use of cold water internally and externally encourage the evolution of heat in the body.

ALCOHOLIC STIMULANTS IN DISEASE.

Another popular error, rife among medical students also, is that alcoholic stimulants are a sheet-anchor in serious disease. Such a notion may be fraught with grave consequences—immediate and remote. A patient, already suffering from the effects of a specific poison, may be doubly poisoned by alcohol, itself an intoxicant, or poison. And—a still greater disaster—a habit of alcoholism may be engendered through the careless administration of alcoholic stimulants. Children and women, as a rule, bear stimulants badly, and in their case especially their use should be but temporary. In so-called “nervousness,” nervous depression and sleeplessness, stimulants are much more likely to do harm than to do good. If they are given at all, it should be under the watchful supervision of the physician, the effect of each dose being carefully noted and weighed.

The question of the administration in fever of these powerful drugs—for such they are—is an anxious one. The chief indications for their use are derived from the state of the pulse, the heart, the tongue, and the brain; and from the presence of complications, particularly of the “typhoid state,” or that state which betokens profound depression of the nervous and muscular systems. Stimulants are most urgently required during the night and in the early morning, when the life-tide is at the ebb and the vital powers are wont to flag. In the forenoon they are much less needed. A comparatively safe way of exhibiting stimulants is in combination with food, in the form of eggflip, wine-whey, sillabub, and so on.

DIET OF THE SICK.

This leads me to remark that, if you wish to be a good physician, it is necessary that you should also be a good cook. At all events you should be a good theoretical cook, effect being given to your theory by a good practical cook. There is scarcely a disease in which diet does not play a more important part than mere medicines. Again, there are no two patients whom precisely the same dietary will suit. We might say: *Quot homines, tot epulæ*. The skill of the physician will at times be severely tested in the attempt to draw up a suitable bill of fare for a fastidious patient. We should always remember that “what is one man’s food is another man’s poison.” Dr. T. King Chambers, in his excellent “Manual of Diet in Health and Disease” (published in 1875), reminds us that when the tailor in Laputa sternly refused to take the usual measurements, and insisted on constructing Captain Gulliver’s coat, waistcoat, and breeches on abstract principles, the customer vowed it was the

worst suit of clothes he ever had in his life. Dr. Chambers adds : " We should certainly fail in the same way if we did not take the measure of numberless contingencies in the daily life, and numberless peculiarities in the persons of those who consult us about their diet and regimen."

PULMONARY TUBERCULOSIS.

The hospital treatment of consumption—by which is commonly understood pulmonary tuberculosis—is an anxious question, and one that is difficult of solution. Year by year the conviction grows stronger that in treating this fell disease in the wards of a general hospital we are committing a grave hygienic error.

In an Address on the " Prevention and Cure of Tuberculosis," delivered before the Section of Medicine at the Carlisle meeting of the British Medical Association in 1896, I pointed out that, theoretically, the air of an hospital ward, however clean and well-ventilated that ward may be, is unsuited for a consumptive. In it his surroundings are calculated to depress. The dietary may not coax his appetite. And then to look at the question from the point of view of the other patients, the presence of the consumptive may be no more than tolerated. He keeps them awake at night with his hacking and racking cough ; he resents open windows, yet may pollute the air in the ward to an extreme degree. If his expectoration is not destroyed or disinfected, he may even infect his fellow-sufferers with his own disease.* He occupies month after month a bed which otherwise would accommodate many generations of patients labouring under less chronic and more curable maladies. Lastly, the hospital treatment of tuberculosis breaks down because of its utter inadequacy to cope with so universal and so tedious a disease. In a week every bed in every hospital in the United Kingdom might be filled with consumptives, and even then thousands upon thousands of cases would be left without hospital accommodation, so widespread is the plague of phthisis.

The Hospital Treatment of Tuberculosis should resolve itself into providing of—

1. *Consumption Hospitals, or Sanatoria*, in which the disease could be treated in its earlier and more hopeful stages.
2. *Special Consumption Wards* in General Hospitals, into which tuberculosis, and that disease alone, should be received.

* Geo. Allan Heron. The Relation of Dust in Hospitals to Tuberculous Infection. *Lancet*, Jan. 6, 1894.

3. *Refuges* for those far advanced in, or dying of, consumption. The German name for such an institution is very expressive—"Friedensheim," or "Home of Peace."

The providing of special wards in, or adjacent to, our general hospitals would meet to a certain extent some of the objections I have advanced to the treatment of consumption in hospitals. In such wards consumptives in a more advanced stage of the disease could be treated, the separate principle being carried out wherever possible, a ward in any case being planned to contain never more than 3 or 4 patients, and provision being made for inhalations of ozonised oxygen, as suggested and carried out by Dr. Ransome.

In Dublin there are two large institutions of a sadly pathetic nature—one is the Royal Hospital for Incurables; the other, Our Lady's Hospice for the Dying. The former stands on its own grounds, which are very extensive, in the Pembroke Township, a healthy suburb of Dublin. It was founded in 1740, but has been greatly enlarged within recent years. It contains 212 beds, many of which are occupied by cancer cases, and patients suffering under incurable visceral diseases (of the heart, liver, kidneys, &c.). There are also numerous cases of advanced or incurable tuberculosis.

Our Lady's Hospice for the Dying stands on extensive grounds at Harold's Cross, in the Rathmines Township, another large outlet of Dublin. This institution affords accommodation for 112 patients, and is designed only for those whose illness is likely to terminate fatally within a limited period. The bulk of the cases received into the wards are the victims of tuberculosis, and especially of consumption.

MEDICAL ETIQUETTE.

I do not wish to weary you with a long Address, but there is one fact which, if once pressed home, may save you and others from many a heart-burning in your professional life. A physician or a surgeon has no vested right or property in a patient. To put it in another way, the public have the most absolute right to choose their own medical attendants, and to change them as often as they please. Therefore, do not pick a quarrel with a professional brother on the ground that he has superseded you, and do not judge him harshly, or at all, until you have heard both sides of the question.

Do not misunderstand me. While the public must be left free-handed in this matter, a serious responsibility rests upon every

member of our profession who does not act towards his professional brethren with consummate tact, consideration, and forbearance. Never take advantage of a brother. If you are called in to visit a patient hitherto under his care, acquaint him of the fact with the least possible delay. Come to an honourable understanding with him. Do unto him as you would he should do unto you. If he then takes umbrage, the fault lies at his door, not at yours. Such is "Medical Etiquette." William Stokes concluded one of his eloquent Addresses on our conduct towards other men with the words of Hamlet—"Use them after your own honour and dignity; the less they deserve the more merit is in your bounty."

CONCLUSION.

It only remains for me to bid those of you who are now for the first time entering our wards for clinical study, *cento mille pälte*—*a hundred thousand welcomes*—and to grasp once more in hearty friendship the hands of those who have in past sessions worked side by side with us in the harvest-field of this hospital.

In the *Song of the Old Woman of Beare*, Digdi, the aged woman of Bearhaven—who for a hundred years had worn the veil which Cummine blessed upon her head—contrasts, in language of indescribable pathos and beauty, the privations and sufferings of her old age with the pleasures of her youth, when she had been the delight of kings. She draws her imagery from the flood-tide and ebb-tide of the wide Atlantic, on whose shore she had lived and loved and suffered—

"The wave of the great sea talks aloud,
Winter has arisen."

Be it yours rather, after a youth spent in noble toil and loving service to the sick and suffering, to enjoy in your old age the pleasures born of a well-spent life, and on the flood-tide of the Master's love to be wafted into the quiet haven, where—

"Beyond these voices there is Peace."

LITERARY INTELLIGENCE.

DR. JELLETT, the author of a "Short Practice of Midwifery," which has already reached a second edition, is, we learn, at work upon a companion volume on Gynæcology. The work, which will be of an eminently practical character, will be illustrated freely. The publishers are to be Messrs. J. & A. Churchill, of 7 Great Marlborough-street.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—EDWARD H. BENNETT, M.D., F.R.C.S.I.

General Secretary—JOHN B. STORY, M.B., F.R.C.S.I.

SECTION OF SURGERY.

President—R. L. SWAN, President of the Royal College of Surgeons in Ireland.

Sectional Secretary—JOHN LENTAIGNE, F.R.C.S.I.

Friday, May 12, 1899.

The PRESIDENT in the Chair.

Gastro-Enterostomy.

MR. C. B. BALL read a paper on this subject. The form of operation recommended was the posterior route through an opening made in the transverse meso-colon, as advocated by von Hacker and Courvoisier. The first loop of jejunum arising from the duodenum was selected, and divided completely across, as recommended by Wolfier, the incision being continued for about an inch and a half into the mesentery; the mesenteric wound was topsewn with fine catgut, and the distal end implanted into the stomach by means of the author's pattern of decalcified bone ring for intestinal anastomosis, the proximal end having previously been implanted laterally into the jejunum with a second ring at a point about three inches below the portion joined to the stomach. The advantages of an ample and direct lead from the stomach to the intestine, together with the entrance of bile and other duodenal contents into the bowel at a point some inches away from the stomach, in the opinion of the author more than counterbalanced the disadvantage of a double anastomosis, and the treatment of a considerable mesenteric wound. Two cases were related. In the first the stricture of the pylorus was manifestly malignant, with considerable involvement of the omenta and glands. The patient recovered well, and two months after operation had increased two stone in weight; he subsequently developed secondary cancer of the liver, of which he died six months after operation. In the second case the tumour was more extensive, and appeared to be malignant.

The operation was carried out in the same way, except that the duodenal end of the jejunum was attached to the stomach, and the distal end laterally implanted into the proximal. At the time of writing, eight months after operation, the patient was in absolutely good health in every respect, so that it is possible that the diagnosis of malignancy was mistaken.

MR. P. J. FAGAN remarked on the rapidity of Murphy's button over simple suture.

MR. M'ARDLE took exception to the term gastro-enterostomy, as a gastro-enterostomy lower down was not surgery at all, and he thought that they should confine themselves to the term gastro-jejunostomy. Herniation might occur in anterior gastro-jejunostomy, and, therefore, the operation should be exterminated. In a case of anterior gastro-jejunostomy performed by himself persistent churning up of bile in the stomach occurred, and every morning the patient vomited three or four ounces of acid bile, which was very distressing. He liked the operation of posterior gastro-jejunostomy, which was simple. From 1890 till the present he had done eight operations, all for benign stricture, successfully, and all the patients were still alive. He was against continuous suture as done by Lauenstein, and believed that a high mortality attended the application of any method of continuous suture in posterior gastro-jejunostomy. He was glad to see that Mr. Ball used the purse-string suture advocated by Murphy in lateral junction of the bowel. He disliked a bobbin such as Mr. Ball's, as it left uncontrolled a piece of inverted bowel wall, and was liable to cause stricture. About two per cent. of Murphy's button on the market were real, the rest were made for tradesmen's profits.

MR. E. H. TAYLOR had seen Mr. Ball perform his operation, and he was greatly impressed with the ease with which it was carried out. He believed that the bone rings were preferable to simple suture. He did not approve of Murphy's button, as the chances of its becoming impacted were very great, and also the difficulty of the button, of the size he would like to use, passing the ileo-cæcal valve, were very great. He held that any operation which fixes the intestine either behind the posterior wall of the stomach, or the anterior wall where the loop is not divided, is not a good operation.

DR. A. R. PARSONS had recently had three patients on whom the operation was performed. The first was a woman between fifty and sixty years of age, who had been operated on successfully for sub-phrenic abscess, and three months later came to hospital with

extreme dilatation of the stomach, with persistent vomiting and emaciation. He felt a very large tumour in the right hypochondriac region, and diagnosticated it as non-malignant. Mr. Croly performed the operation on her by Murphy's button. As far as the operation went nothing could have been more successful. Death followed in two days. *Post-mortem* showed nothing to account for death. The second case was that of a woman between thirty and forty years of age. She suffered from persistent vomiting, and became emaciated very rapidly. A tumour was palpated in the neighbourhood of the pylorus. Examination of the gastric contents showed it to be malignant obstruction of the pylorus. Mr. Johnston performed a posterior gastro-enterostomy. Patient remained perfectly well for three months afterwards, but the disease spreading, vomiting again occurred, and death followed six months after the operation. The third case was that of a man thirty years old. Examination of the gastric contents proved him to be suffering from malignant stricture of the pylorus. Mr. Johnston performed a posterior gastro-enterostomy, and recovery was good. He thought that anterior gastro-enterostomy was a bad operation. He was greatly struck by the extreme simplicity by which the anastomosis could be done by Mr. Ball's bobbin. He thought it might be better to plug the bobbin with some kind of a sterilised cork, instead of plugging with gauze, to insure prevention of extravasation during operation. Had an examination of the gastric contents been made in Mr. Ball's cases?

MR. CROLY thought that it was more the method of operating than the button that was of importance.

MR. G. J. JOHNSTON said that he had used Mr. Ball's bobbin in both cases. He believed in the posterior operation, and not in the anterior. He thought that the direction of the currents of the contents of the stomach and intestine should be the same in both. In his second operation, he used lateral sutures as an addition to prevent kinking.

MR. BALL, in reply to Dr. Parsons, said that free HCl was absent in the first case; he forgot whether it was absent in the second case. His experience of anterior gastro-enterostomy had been very unsatisfactory. He did not understand how Mr. M'Ardle had done a gastro-jejunostomy through the gastro-colic omentum. Mr. M'Ardle's record of eight consecutive cases for eight years was very remarkable. He had not altered the shape of his button, and the purse-string suture was first used by Mr. Greig Smith, and was the only form applicable to a lateral anastomosis. He believed that Murphy's button would soon be obsolete. Dr.

Parsons' suggestion about a cork in the button was very good, but he had always found gauze to answer the purpose. In the second case on which he operated, on introducing the fingers into the stomach, the pyloric orifice represented a virgin os uteri, so that scarcely any contents of the stomach were finding their way into the duodenum at the time of the operation. He thought that regurgitation of the duodenal contents into the stomach was likely to occur in posterior gastro-enterostomy so long as a loop of intestine was simply lateralised to the stomach.

The Section then adjourned.

SECTION OF ANATOMY AND PHYSIOLOGY.

President—D. J. COFFEY, M.B.

Sectional Secretary—A. BIRMINGHAM, M.D.

Friday, June 2, 1899.

The PRESIDENT in the Chair.

Distribution of the Glands in the Human Œsophagus.

THE PRESIDENT (PROFESSOR COFFEY) said that the œsophagus, after fixation and hardening, was divided into twelve segments of equal length, and then sectioned. The glands appeared isolated; they were large enough to be distinctly visible to the naked eye, and lay imbedded in a fairly close-textured fibrous submucosa. Each one was formed of a close cluster of alveoli, lying a short distance below a well-defined continuous and rather broad band of muscularis mucosæ. Sometimes a detached strip of this muscular layer extended below the gland. In the transverse sections, of which a complete set had not yet been made, the glands occurred in interrupted vertical rows. The whole arrangement contrasted remarkably with the thick almost unbroken stratum of glands which occupied the whole submucosa in the dog. The number of glands in any one vertical section through the whole length of the tube was about thirteen as a rule. They were placed in the successive segments, in the following order from above down—three in the upper four segments, four in the next two, the succeeding two segments were devoid of glands, then followed four glands, and lastly, two in the remaining segments. The examination of the junction of the tube with the stomach was as yet unfinished. The upper half of the mucous membrane was therefore better supplied with glands than

the lower half. Other features of the histological structure investigated showed that the unstripped muscle in the circular coat extended almost to the upper extremity of the tube.

The Histology of the Human Vermiform Appendix.

THE PRESIDENT said that the general arrangement and structure of the layers of the tube corresponds with that of the large intestine. The muscular layers are, however, pretty thick for a tube of such dimensions, the external or longitudinal being complete, and containing almost as many rows of cells as the circular layer. Most interest attaches to the submucous coat. It is almost wholly occupied by lymphoid nodules arranged in a thick ring. Each one is conical in form, base outwards, and surrounded by a capsule lined with endothelial cells, which thus constitute a lymph sinus drained by the lymphatics. The solitary follicles, which in the intestine lie mainly in the mucosa, are here crushed out into the submucosa altogether. This determines a condensation of the proper areolar constituents of this layer into a band of dense fibrous tissue, lying outside the nodules and separating them from the muscular wall. One or two thick bands, however, remain in the radial direction, and run inwards from the muscular to the mucous coat. The lymphoid nodules vary much in size, and a few large ones appear to be projected inwards from the ring, invading the mucous coat and reaching to the epithelial surface. These differ in shape from the submucous nodules, being pyriform, with the broad end inwards. They might be described as a sort of second ring pushed inwards from the crowded outer set. The want of uniformity in the size of the nodules is apparently associated with the irregularity of the lumen of the tube. The glands of the mucous coat are of the normal character and are fairly numerous. The muscularis mucosæ is thin and badly defined, it is broken into strips and lies immediately internal to the apices of the conical lymphoid nodules.

PROFESSOR PURSER said that the finding of unstripped muscular tissue so high up in the œsophagus was very interesting, and a new fact to him. He had often in examining pathological specimens been struck with the absence of glands in the œsophagus, but that may have been owing to the pathological condition. The distribution of lymphoid tissue in the vermiform appendix was very interesting; in the rabbit it was the rule that two or three layers of adenoid tissue were present lying over each other.

PROFESSOR BIRMINGHAM said that a striking picture of the

structure of the appendix was given in Testut's Anatomy, but it represented the muscularis mucosæ as lying outside the lymphoid structures. Evidently the true muscularis mucosæ, which is very faint, was overlooked.

The Form and Position of the Thoracic and Abdominal Organs in the Lemur.

DR. C. J. PATTEN read a paper on this subject. The communication was illustrated with lantern slides, and dealt more especially with the relations of the viscera to the vertebral column in the lemur as compared with some other animals. The value of the method of preserving and hardening the viscera with formalin was indicated, and the form which most of the solid organs assumed was brought out.

The PRESIDENT remarked that the methods of classifying vertebrate types came to little more than dentition, and some few features about bones, with most meagre facts about viscera. Regarding lemurs, which are so doubtful in position, it was very useful to show exactly the relations of their organs, and Dr. Patten's work was very carefully done in this respect.

PROFESSOR D. J. CUNNINGHAM said that Dr. Patten's work was most carefully done. It was another evidence of the value of formalin. It was very unsafe to found any classification on one or two characters. The animal must be investigated from top to toe, and recently, even the muscles which had been thrown into disregard for a long time, are being utilised for this purpose. He was doubtful if the study of formalin forms would help much in this particular direction, but he thought that the work would probably help them to get some idea of the forces which were at work in determining the form of solid organs. This might be done by the study of the comparative anatomy, but still more by the study of the foetus. Some organs grew out in the direction of least resistance, and their shape was thus determined. Other organs, such as the liver, offered more difficulty in the way of coming to a conclusion.

PROFESSOR FRASER did not wholly agree with Professor Cunningham's remarks about the manner in which organs were shaped. Some organs had plenty of room at their disposal, but yet took a very definite shape, and he could not see how mechanical causes came into play in every case.

Serial Sections of the Adult Human Body made without Freezing.

PROFESSOR FRASER exhibited serial sections of the entire head

and neck, several from the thoracic region, and the entire lower limb, from a subject which he had cut in the transverse vertical direction, and serially at intervals of about one inch, from the crown of the head to the soles of the feet.

The subject had been injected from the femoral artery with a modified formalin solution under a pressure of about eight feet; it had then remained exposed to the air without covering in the preparation room, when it was removed to the dissecting room, and cut serially at the intervals stated above with an ordinary amputating knife, and a small saw without a back, the latter being applied to the bone wherever that became necessary.

The sections were perfect, both as regards the hardening and the colour of the various tissues. Care had to be taken when cutting in the abdominal region not to allow the coils of the small intestine free in the particular section to fall out; they had to be secured by a stitch to neighbouring fixed coils, or to the adjacent abdominal wall. The hardened blood, which was always found in the veins, in the heart, and in certain of the arteries, in subjects prepared as above, was removed under the water tap, and left the vessels standing out in bold relief in the various sections.

These serial sections could be used with great freedom. They could be handed round the class, and examined by each member; they could be left exposed to the air for days; they could be left under water also for days, or they could be finally mounted in a preservative fluid.

It was desirable to have an alternative method of making useful and instructive serial sections of the adult to that which had hitherto been employed, which was the ordinary mixtures of ice and salt, or snow and salt, in the absence of proper refrigerating chambers, which were not, as a rule, attached to anatomical departments in Great Britain or Ireland. The meeting could say whether the sections now exhibited would not bear favourable comparison with any that had ever been made by the method of freezing.

The PRESIDENT said that the sections were of great value for teaching purposes, and showed the natural appearances very well.

PROFESSOR BIRMINGHAM complimented Professor Fraser on the beauty and usefulness of the specimens.

Formalin Specimen of the Abdomen.

PROFESSOR BIRMINGHAM exhibited a formalin specimen of the abdomen, prepared to show the lines of reflection of the peritoneum.

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D. Univ. Dubl.;
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VITAL STATISTICS

For four Weeks ending Saturday, October 7, 1899.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Sept. 16	Sept. 23	Sept. 30	Oct. 7			Sept. 16	Sept. 23	Sept. 30	Oct. 7	
23 Town Districts	26·6	24·0	27·0	24·7	25·6	Limerick -	19·6	19·6	40·7	9·8	22·4
Armagh -	21·4	21·4	35·6	28·5	26·7	Lisburn -	21·3	21·3	8·5	34·1	21·3
Ballymena	22·5	16·9	5·6	16·9	15·5	Londonderry	23·6	28·3	18·8	22·0	23·2
Belfast -	23·5	22·8	21·9	26·1	23·6	Lurgan -	18·2	18·2	4·6	27·4	17·1
Carrickfergus	23·4	5·8	29·2	0·0	14·6	Newry -	8·1	20·1	8·1	24·1	15·1
Clonmel -	24·3	9·7	29·2	4·9	17·0	Newtownards	34·0	11·3	22·7	17·0	21·3
Cork -	18·0	28·4	36·0	22·8	26·3	Portadown -	12·4	18·6	37·1	18·6	21·7
Drogheda -	15·2	3·8	34·2	22·8	19·0	Queenstown	11·5	11·5	0·0	11·5	8·6
Dublin - (Reg. Area)	34·3	28·9	31·6	28·8	30·9	Sligo -	71·1	15·2	25·4	0·0	27·9
Dundalk -	20·9	33·5	12·6	20·9	22·0	Tralee -	22·4	28·0	11·2	61·6	30·8
Galway -	15·1	18·9	37·8	7·6	19·9	Waterford -	31·8	17·9	45·8	15·9	27·9
Kilkenny -	28·3	9·4	33·0	4·7	18·9	Wexford -	18·1	9·0	18·5	31·6	18·1

In the week ending Saturday, October 7, 1899, the mortality in thirty-three large English towns, including London (in which the rate was 17·9), was equal to an average annual death-rate of 18·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 17·5 per 1,000. In Glasgow the rate was 17·6. In Edinburgh it was 18·6.

The average annual death-rate represented by the deaths registered during the same week in the Dublin Registration Area and

in the twenty-two principal provincial Urban Districts of Ireland was 24·7 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,053,188.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 5·1 per 1,000, the rates varying from 0·0 in twelve of the districts to 12·4 in Portadown—the 3 deaths from all causes in that district including one from enteric fever and one from diarrhœa. Among the 175 deaths from all causes registered in Belfast are one from measles, one from scarlatina, 4 from whooping-cough, one from simple continued fever, 14 from enteric fever, and 9 from diarrhœa. Among the 33 deaths in Cork are one from measles and 5 from diarrhœa. The 8 deaths in Lisburn comprise 2 from measles.

In the Dublin Registration Area the births registered during the week amounted to 190—95 boys and 95 girls; and the deaths to 196—97 males and 99 females.

The deaths, which are 47 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 29·2 in every 1,000 of the population. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the area, the rate was 28·8 per 1,000. During the forty weeks ending with Saturday, October 7, the death-rate averaged 28·9, and was 2·0 over the mean rate for the corresponding portions of the ten years 1889–1898.

The number of deaths from zymotic diseases registered was 56, being 33 over the average for the corresponding week of the last ten years, but 18 under the number for the previous week. The 56 deaths consist of 32 from measles—being 4 over the number from that cause in the preceding week, and forming the highest number registered in any week since the commencement of the present epidemic—one from influenza, 2 from whooping-cough, 4 from enteric fever, one from cholera infantum, and 16 from diarrhœa. Forty-seven of the 56 deaths from zymotic diseases—including 30 deaths from measles and 14 from diarrhœa—occurred among children under 5 years of age, those from diarrhœa comprising 12, and those from measles 6, deaths of infants under one year old.

The weekly number of cases of measles admitted to hospital, which had fallen from 62 in the week ended September 23 to 53 in the following week, rose to 99. Eighty-nine patients were discharged, 10 died, and 149 remained under treatment on Saturday, being equal to the number in hospital at the close of the preceding week.

The number of cases of scarlatina admitted to hospital was 10, being one under the admissions in the preceding week, but 2 over the number admitted in the week ended September 23. Seven patients were discharged, and 39 remained under treatment on Saturday, being 3 over the number in hospital on that day week. This number is exclusive of 24 convalescents at Beneavin, Glasnevin, the Convalescent Home of Cork-street Fever Hospital.

Sixty-three cases of enteric fever were admitted to hospital, being 2 over the admissions in the preceding week, but 6 under the number admitted in the week ended September 23. Fifty patients were discharged, 3 died, and 313 remained under treatment on Saturday, being 10 over the number in hospital at the close of the preceding week.

The admissions to hospital included 2 cases of diphtheria; 9 cases of this disease remained under treatment on Saturday.

Thirty-one deaths from diseases of the respiratory system were registered, being 10 over the average for the corresponding week of the last ten years, and one over the number for the previous week. They consist of 16 from bronchitis and 13 from pneumonia.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of September, 1899.

Mean Height of Barometer, -	-	-	29·859 inches.
Maximal Height of Barometer (on 9th, at 9 a.m.),	30·273	„	
Minimal Height of Barometer (on 30th, at 3 p.m.),	29·258	„	
Mean Dry-bulb Temperature, -	-	-	54·9°.
Mean Wet-bulb Temperature, -	-	-	52·1°.
Mean Dew-point Temperature, -	-	-	49·5°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·360	inch.	
Mean Humidity, -	-	-	82·9 per cent.
Highest Temperature in Shade (on 4th),	-	-	71·8°.
Lowest Temperature in Shade (on 28th),	-	-	39·0°.
Lowest Temperature on Grass (Radiation) (29th)	32·5°.		
Mean Amount of Cloud, -	-	-	51·0 per cent.
Rainfall (on 21 days), -	-	-	2·748 inches.
Greatest Daily Rainfall (on 30th), -	-	-	1·042 inches.
General Directions of Wind, -	-	-	N.W., W., S.W.

Remarks.

September, 1899, was a month of sharp contrasts as regards temperature—at first it was decidedly warm, afterwards it became still more decidedly cold, so that a minimum of 29° was registered in the screen at Parsonstown on the night of the 29th–30th. The net result was to give a mean temperature for the whole month slightly above the average. For the rest, the month was unsettled and very squally, and showery blustering westerly and north-westerly winds prevailing almost constantly from the 15th to the 26th inclusive. At the close night frosts occurred inland, and downpours of rain were generally accompanied by much thunder and lightning. Hail also fell in many places.

In Dublin the arithmetical mean temperature (56.2°) was slightly above the average (55.8°); the mean dry-bulb readings at 9 a.m. and 9 p.m. were 54.9° . In the thirty-four years ending with 1898, September was coldest in 1886 and in 1882 (M. T. = 53.0°), and warmest in 1865 (M. T. = 61.4°) and in 1898 (M. T. = 60.2°).

The mean height of the barometer was 29.859 inches, or 0.051 inch below the corrected average value for September—namely, 29.910 inches. The mercury rose to 30.273 inches at 9 a.m. of the 9th, and fell to 29.855 inches at 3 p.m. of the 30th. The observed range of atmospheric pressure was, therefore, 1.015 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was 54.9° , or 7.3° below the value for August, 1899. Using the formula, *Mean Temp.* = *Min.* + (*max.* – *min.* $\times .476$), the mean temperature was 55.9° , or 0.4° above the average mean temperature for September, calculated in the same way, in the twenty-five years, 1865–89, inclusive (55.5°). The arithmetical mean of the maximal and minimal readings was 55.2° , compared with a twenty-five years' average of 55.8° . On the 4th the thermometer in the screen rose to 71.8° —wind, S.; on the 28th the temperature fell to 39.0° —wind, W. The minimum on the grass was 32.5° on the 29th.

The rainfall was 2.748 inches, distributed over 21 days. The average rainfall for September in the twenty-five years, 1865–89, inclusive, was 2.176 inches, and the average number of rainy days was 14.7. In 1871 the rainfall was very large—4.048 inches on, however, only 13 days; in 1896 no less than 5.073 inches fell on 23 days, establishing a record rainfall for September. On the other hand, in 1865, only .056 inch was measured on but 3 days.

High winds were noted on 13 days, and attained the force of a

gale on six occasions in Dublin—the 18th, 19th, 21st, 22nd, 24th, and 26th. The atmosphere was foggy on the 7th, 29th, and 30th. Solar halos were seen on the 6th and 21st. A thunderstorm occurred on the 30th. Thunder was heard on the 29th. Lightning was seen on the 5th and 29th.

The rainfall in Dublin during the nine months ending September 30th amounted to 20·948 inches on 138 days, compared with 10·968 inches on 112 days during the same period in 1887, 17·968 inches on 137 days in 1898, and a twenty-five years' average of 19·734 inches on 142·8 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall was 2·810 inches distributed over 19 days. Of this quantity 1·030 inches fell on the 30th. At that station the rainfall since January, 1899, has been 28·440 inches on 139 days, compared with 25·896 inches on 137 days in 1894, 23·665 inches on 117 days in 1895, and 21·912 inches on 115 days in 1896, 29·570 inches on 158 days in 1897, and 19·688 inches on 124 days in 1898.

At Cloneevin, Killiney, Co. Dublin, the rainfall in August was 3·61 inches on 13 days (the maximal fall in 24 hours being 1·95 inches on the 5th), compared with a fourteen years' average of 2·995 inches on 17·1 days. In September 3·04 inches fell at Cloneevin on 20 days. The maximal fall in 24 hours was 1·02 inches on the 30th. On the average of fourteen years the September rainfall at this station has been 1·790 inches on 12·28 days. Since January 1, 1899, 23·75 inches of rain have fallen at Cloneevin on 139 days. The rainfall in the first nine months of the year at Cloneevin was 22·92 inches on 150 days in 1894, 21·58 inches on 129 days in 1895, 20·50 inches on 129 days in 1896, 22·91 inches on 158 days in 1897, and 18·19 inches on 136 days in 1898.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, rain fell in measurable quantity on 12 days to the total amount of 2·411 inches, compared with 3·166 inches on 11 days in the same month of 1897, and 1·991 inches on 13 days in 1898. The maximal fall in 24 hours was ·813 inch on the 30th. Since January 1, 1899, the rainfall at this Second Order Station has been 26·159 inches on 129 days. The highest temperature in the screen was 71·7° on the 5th, the lowest was 37·9° on the 29th.

At Recess, Co. Galway, the rainfall was 4·673 inches on 26 days, 1·061 inches being measured on the 21st.

PERISCOPE.

REMOVAL OF THE STOMACH.

THE woman from whom Schlatter removed the whole stomach for carcinoma lived not quite fourteen months after the operation, and died of multiple cancerous lymphatic nodules, and the resultant cachexia. There was no trouble during this period in keeping up the nutrition of the patient. The autopsy showed that there was no attempt either on the part of the duodenum, or of the œsophagus, to dilate and form a pouch, as was observed by Czerny after removal of the whole stomach in a dog. The food taken passed directly from the œsophagus into the intestine, and that intestinal digestion was sufficient to supply her wants, was shown not only by the long continuance of life, but by the fact that for a considerable period after the operation she gained in weight.—*Medical News*, June 3, 1899.

FATAL WASP STING.

F. H. COOKE, M.R.C.S., L.R.C.P. (*Brit. Med. Jour.*, Vol. II., 1898, p. 1429) reports the case of a strong, healthy girl, aged 24, who was stung by a wasp in the hand. A few minutes afterwards her face was very red. She complained of feeling numb all over, and of losing her sight; she then fainted. (These symptoms of numbness and blindness had also occurred on a previous occasion when she was stung.) Her face turned suddenly pallid and she expired in about twenty-five minutes.

[Death from sting of a wasp is reported in the *Lancet* (1883); by Carpenter (1865), Casari (1853). An early number of the "Methodist Magazine" has a case of a bee-sting of the tongue causing suffocation. Dammann (1845) gives a case of delirium ferox following on the sting of a bee. Ewens (1860), Finkel (1861) report cases. Similar cases have been reported by Hanbury (1860), Horing (1862), Lassen (1879), de Lepine (1875), Michel (1861), Nivison (1857), Norton (1855), Odell (1873), Plotzlicher (1872), Richoud (1827), Schemm (1860), Tonoli (1883).]

OBLITERATION OF THE CAVITY OF THE UTERUS FROM THE USE OF STEAM.

OTTO VON WEISS, (*Centr. Bl. f. Gynëkol.*, June 18).—A woman, aged 19, suffered from abundant metrorrhagia, for which steam was applied to the mucous membrane of the uterus during scarcely

45 seconds. Five months afterwards no trace of the external os could be found. During an unsuccessful attempt to restore permeability of the uterus the cervical canal was found partly preserved, but the uterine cavity had entirely disappeared.

KOPLIK'S "NEW DIAGNOSTIC SIGN OF MEASLES."

THIS is not a new thing, but, like so many "discoveries" nowadays, it has been "anticipated" by somebody else. In the year 1880 a Danish practitioner, A. Flindt, published in *Sundhedskollegiets Aarsberetning* the following description:—"Second day of pyrexia: On the anterior surface of the soft palate, and on the adjoining half of the hard palate, a mottled rash appears; this eruption acquires a peculiar appearance through numerous small, bluish-white, punctiform, almost vesicular-looking specks, which are situated in the centre of the small red spots, and, like these spots, form irregular groups. One can see and feel how prominent these small miliary vesicles are. The conjunctiva of the lids show similar miliary 'formations.' Third day of pyrexia: Similar groups of vesiculated spots appear on the buccal mucosa, especially in that part of the buccal mucous membrane which lies opposite the interstice between the upper and lower molar teeth. 'After this buccal eruption the measles rash appears in the skin. . . .'" So far Flindt, who not only saw and described in almost identical terms that "new diagnostic sign" eighteen years before its re-discovery across the Atlantic, but, what is still more interesting, also noticed the prominent specks in the conjunctiva of the eyelids, and he also "felt" them in the mucous membrane of the mouth. Not only books, but also early diagnostic signs, have their fates. The disinterment of Dr. Flindt's remarkable discovery is due to the learning and cosmopolitan reading of Professor Dr. Jürgensen, who published the first German translation of this quotation from the Danish in his famous book on "Acute Exanthemata" (Nothnagel's "System of Special Pathology and Therapeutics").—*Treatment*, July 13, 1899.

ERYSIPELATOUS PNEUMONIA.

A CASE is reported by Artaud and Barjon (*Gazette des hôpitaux*, 1898, No. 102; *Centralblatt für innere Medizin*, August 27, 1899). The patient, who was recovering from facial erysipelas, was attacked with dyspnoea disproportionate to the physical signs, and with spasmodic cough. There were no pneumococci in the sputa, but they contained the *Streptococcus erysipelatos*, as was shown by their producing typical erysipelas when inoculated on a rabbit's ear.—*New York Med. Jour.*, September 23, 1899.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

The New "Tabloids" of Cascara Sagrada.

MESSRS. BURROUGHS, WELLCOME & Co. have recently issued two new "tabloid" preparations of cascara sagrada. In the past it has been the custom of the firm in question to issue "tabloid" cascara sagrada containing 2 grains of dry extract, but as the susceptibility of patients to the action of the drug varies somewhat, they have been requested to prepare it containing 1 and 3 grains of dry extract. By the issue of these three different strengths it is hoped that the administration of cascara sagrada extract on a definitely regulated plan will be simplified.

It is suggested that one of the 3 grain strength may be taken once, twice, or even thrice daily for habitual constipation until the habit of regular action of the bowels is established, when the dose should be gradually reduced to one of 1 grain strength taken once daily. It is then usually possible to do without a laxative after a short period.

These "tabloid" products are issued, both plain and sugar-coated, in bottles containing 25 or 100 in each.

"Soloid" Microscopic Stains.

THE tendency to decompose which solutions of the aniline dyes exhibit has always been a source of trouble in microscopic work. To obviate this drawback, Messrs. Burroughs, Wellcome & Co. have devised a number of "soloid" microscopic stains. By means of these, fresh solutions of the various stains may be prepared in small quantities when required. Such "soloids" of gentian violet, methylene blue, eosin, Bismarck brown, and fuchsin have been submitted to us. These various stains can be bought for four shillings and sixpence per dozen tubes of six each.

A saturated watery solution of fuchsin, methylene blue, gentian violet, or Bismarck brown is obtained by powdering one "soloid" product in 7 c.c. (two drachms) of distilled water, and then shaking well. Five to ten per cent. dilutions with distilled water of these saturated solutions are well adapted for ordinary staining purposes. Thus one drachm of saturated solution made up to two drachms with distilled water, gives 1 in 17, or a 6 per cent. solution.

A saturated alcoholic solution of methylene blue, gentian violet, or Bismarck brown may be obtained by treating in the same way one "soloid" product with a similar quantity of absolute alcohol instead of distilled water. A saturated alcoholic solution of fuchsin

is obtained by treating two "soloid" preparations with 3·5 c.c. (one drachm) of absolute alcohol.

To obtain a solution of eosin suitable for general staining one "soloid" product should be dissolved in 12·25 c.c. (three drachms) of 50 per cent. absolute alcohol in distilled water. This gives approximately a 0·5 per cent. solution.

Neave's Food for Infants and Invalids.

MESSRS. JOSIAH R. NEAVE & COMPANY, of Fordingbridge, *viâ* Salisbury, have submitted to us samples of their well-known and most valuable food. It can hardly claim to be a "New Preparation," as it has been for many years one of the most popular infants' and invalids' foods in the market.

Neave's Food is particularly rich in proteids and phosphates, as well as in potash. It contains, therefore, a large proportion of both flesh-forming and bone-forming ingredients, and so is invaluable in cases of wasting from acute or chronic disease and in constitutional delicacy of any kind. Its use from infancy is a preventive of rickets and also of premature decay of the teeth. Finally, it is both palatable and easy of digestion at all ages. Its reasonable cost brings it within the reach even of those whose income is of very modest proportions.

The Aseptic Surgical Dressing Co.

WE have received from the above company samples of their sterilised dressings and bandages, the manufacture of which they have undertaken in order to meet the great spread of aseptic surgery. "The dressings, first carefully sterilised, are packed in specially prepared 'cartons,' so constructed that, while they allow superheated steam to pass rapidly through their pores, they offer an effectual barrier to all micro-organisms. After the 'cartons' are securely sealed they are placed in a specially adapted 'autoclave,' where they are again subjected to the action of superheated steam. *Thus the dressings and their coverings undergo a second sterilisation.*" As the sterilisation of the products is guaranteed bacteriologically, it seems as if we had here an ideal emergency dressing case. The "carton" sent to us contained lint, three bandages, absorbent wool, safety pins, gauze (plain and iodoform), waterproof tissue, and three sizes of drainage tube. All seem of excellent quality. They are specially recommended by the firm to the "general medical practitioner" who does not possess facilities for sterilising his own dressings. Unless the general practitioner has been soundly trained in the schools of bacteriology and of aseptic surgery, we would

strongly advise him not to dabble in sterilised dressings, but to stick to older methods with which he is more familiar. Asepsis in untrained or careless hands can only lead to deplorable and preventable results.

Indicators for Chemical Tests.

IN conducting chemical tests, and especially in volumetric determinations, it is frequently necessary to make use of some substance which is capable of indicating the end of a reaction, such as the exact point of neutralisation of an acid or an alkali, &c. Since many of these so-called indicators are more or less unstable in solution, especially when exposed to light, their preparation as "Soloid" products in a compressed and permanent form by the firm of Messrs. Burroughs, Wellcome & Co., of London and Sydney, has been highly appreciated. By this means small amounts of a solution of any indicator, of the proper quality and strength, may be quickly prepared as required.

The following represent the indicators more frequently used:—

"*Soloid*" *Indigo Carmine*.—One, dissolved in 10 c.c. of solvent, forms a suitable strength.

"*Soloid*" *Lacmoid*.—One, dissolved in 10 c.c. of solvent, forms a suitable strength. This is much more delicate in reaction than litmus, and it may be used in all cases where the latter is suitable as an indicator. In contact with acids it becomes red, and when thus slightly reddened it is again rendered blue by alkalies.

"*Soloid*" *Methyl Orange*.—One is crushed and dissolved in water to make 10 c.c. of solution. The solution acquires a yellow colour in contact with alkali hydrates, carbonates, and bicarbonates. It is not affected by carbonic acid, but the mineral acids change its colour to crimson.

"*Soloid*" *Phenolphthalein*.—One is dissolved in diluted (50 per cent.) alcohol to make 10 c.c. of solution. This is coloured deep purplish-red by alkali hydrates or carbonates, and acids render the reddened solution colourless. It is not suitable as an indicator for ammonia or bicarbonates.

"*Soloid*" *Rosolic Acid*.—One is dissolved in 1 c.c. of diluted (50 per cent.) alcohol, and enough water added to make 10 c.c. of solution.

"*Soloid*" *Starch*.—One is added to about 100 c.c. of water, the liquid boiled for a few minutes, and when cold the clear liquid is poured off for use. It is used as a test for the presence or absence of free iodine, and in volumetric processes based on a determination of this element.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XX.—*Venereal Diseases and their Therapeutics.** By
ROBERT LAFAYETTE SWAN, President of the Royal
College of Surgeons in Ireland; Surgeon to Steevens'
Hospital, Dublin.

It may not be thought out of place at this time, when the subject of the prevention and treatment of syphilis in the Army and Navy has been recently under discussion, to make a few observations on this subject, so important to the community at large, as well as to our soldiers and sailors. I shall not enter on the question of the prevention of syphilis by legislative means. Almost all persons who are competent to form opinions unbiassed by side issues have offered those opinions to successive Governments in this country.

The classification of venereal diseases into gonorrhœa, the chancroid or soft sore, and the Hunterian chancre, or true syphilis, is, I believe, unalterable. They have nothing in common, unless the locality. Gonorrhœa is a local disease attacking the mucous membrane, and specific in the fact of its having a special microbe. It is true that there are occasional instances of systemic infection, evidenced by

* Being the substance of a Presidential Address delivered before the Section of Surgery in the Royal Academy of Medicine in Ireland, on Friday, November 10, 1899.

so-called gonorrhoeal rheumatism, by internal ophthalmic lesions, not produced by contagion, and by eruptions on the skin. In those exceptional instances there may, be an infective process. In the chancroid, likewise, a circumscribed infective process may occur, as in the production of the ordinary chancroidal bubo. True syphilis has its importance and essence in its being always an infective disease, the organisms passing into the general circulation, and existing and multiplying in favourable situations.

How is it, then, that a lesion presenting at first all the features of a soft sore may in time alter its character, and be followed by some or all the sequelæ of true syphilis? Many surgeons of distinction consider the poisons of chancroid and true syphilis to be identical. I believe the patient in all such cases to have received a double inoculation; that the chancroid has furnished a favourable culture-medium for the syphilitic microbe, and perhaps even hastened its period of incubation, which under average circumstances is from three to four weeks.

Let us examine the usual progress of a soft sore. It commences as a papule, which at the end of the second or third day (depending on the delicacy of the skin involved) becomes a pustule. This soon bursts, and at the end of the first week a deep, suppurating sore is found, which increases in circumference and depth, and secretes pus abundantly. In the soft sore are found all the phenomena of inflammation, but no induration or thickening of its base. There is a tendency to a progressive destructive involvement of surrounding tissues. The pus is inoculable on the patient himself—on either the mucous membrane or skin; so that from want of cleanliness or care the sore is often multiple. Chancroids may be treated as are other unhealthy wounds. I have myself a routine, based upon the application of germicidal or antiseptic agents. Other surgeons have their methods. The chancroid sometimes tardily takes on, at length, healing action, and gets well like any other ulcer, and is followed by no constitutional effects. Frequently, as before stated, the lymphatics in the inguinal region become enlarged, and after a time suppurate, leaving perhaps troublesome sinuses, which lead to an indurated

mass of inflamed tissue. In passing, I may say that I have found the best practice, in the case of chancroidal bubo in any stage, is to cut down on the swollen tissues, remove them with a sharp curette, thoroughly cleanse the parts, and sew up the skin wound. It usually heals at once, and no further trouble is experienced.

Not rarely, however, as time goes on, the sore assumes a new appearance, the surface ceases to secrete pus, it becomes glazed, and the base hard and cartilaginous. Still later the throat becomes ulcerated, skin eruptions appear, and the existence of true syphilis is disclosed. Here, then, is the argument of those who maintain the identity of the poisons. It is, I believe, as I have stated before, a double inoculation, and the change and evolution of the simple chancroid is explained by the latency of the microbe of true syphilis and its more extended period of incubation.

Sometimes a soft sore, from intense inflammatory action, produces a rapid and destructive tissue necrosis, known as phagedæna. This event appears to show an intermission and recrudescence in type, like other diseases which vary in the intensity of their local inflammatory lesions—for example, we see scarlatina maligna and measles of a virulent form. When I was House Surgeon at Steevens' Hospital, thirty years ago, phagedæna was one of the commonest occurrences; for many years it was infrequent, lately it has not been uncommon. It was supposed that it occurred invariably in persons of broken-down constitutions. This is not so; I have seen it in many persons of good general health and vitality. I believe that the true explanation is this: That, as persons in civilised communities become immunised to a degree by a remote or recent inoculation by the microbes of the diseases of civilisation, persons showing no powers of resistance have either escaped the immunising taint or it has become attenuated and lost.

The Genesis and Progress of the True Syphilitic Sore.—It always appears at the site of inoculation at a period varying from ten days to six weeks. Where lurks the virus during this long period? All the evidence shows that it must remain in the habitat of the inoculation. If, as some

have supposed, the Hunterian chancre is secondary to a constitutional infection, it would be reasonable to expect that during the two months other characteristic lesions would be seen elsewhere. This opens up the question whether syphilis can be aborted by the excision of the chancre. But the infiltration and enlargement of neighbouring lymphatic glands appear to be almost synchronous with the induration of the sore, and while there is a great difference of opinion as to the value of the treatment it seems reasonable that if seen early the virus may be removed at once. Further investigations in this direction would be valuable.

It may commence as an erosion, a papule, or less frequently an ulcer, ten days or more after exposure. Ulceration, if it exists, which is not invariable, is unaccompanied by the profuse secretion of pus which distinguishes a soft sore. The essential induration is produced by a sclerosis of the small blood-vessels and a preservation and infiltration of the fasciculi of the connective tissue. It occurs at the end of the first week from the appearance of the sore. There are varieties, but the most common chancre is a small cell-like depression on an elevated and hardened base. The induration varies remarkably in different tissues.

The enlargement of the lymphatic glands in true syphilis is progressive, but always begins in those nearest the inoculation. About six weeks is occupied in the involvement of all the visible lymphatics. For diagnostic purposes, if necessary, the multiple induration of the posterior cervical glands is especially valuable.

The Treatment of Syphilis.—The excision of primary lesions has been alluded to. It remains to consider the treatment of syphilis by medicine. Almost from the earliest records of the disease mercury has as a remedy enjoyed a position which it still holds. No doubt, in former times abuse of the drug was usual, and manifestations of mercurial poisoning were common. After the Peninsular war Aix-la-Chapelle obtained notoriety for the relief of those ailments. It has ever since been frequented by syphilitics. Steevens' Hospital was endowed in the earlier years of this century for the maintenance of beds

for the treatment of syphilis, and in No. 2 Ward were made the observations of Abraham Colles, from which were evolved the description he gave of secondary suppurating lesions, the advantages of mercurial fumigation, his celebrated law of immunity, and the true nature and accompanying signs of the lymphatic swelling known in every country as Colles' constitutional bubo. Wallace also—at that time surgeon to Jervis-street Hospital—was a frequent visitor and observer.

The records of treatment furnish curious information regarding the administration of mercury. It seems to have been considered that its benefits were derived from its action as a sialogogue. When I first went there as a student there were certain pewter cups capable of holding about a quart. The mercury was said to have been persevered with in former years till one, two, or three of these cups were filled by the patient in the day. In spite, however, of changes of thought resulting from its abuse, there is no remedy to equal mercury in the treatment, at least, of primary syphilis. It should be given at the very earliest period a diagnosis is made, and the system should be kept persistently, although slightly, under its influence for a lengthened period. The great difficulty in the treatment of syphilis is the length of time required to combat the periodic manifestations of the toxins. This difficulty has been to some extent met by the method of intra-muscular injection of mercurial cream of Major Lambkin. The injection is administered once a week, and the dosage is maintained by slow absorption. I have administered it on numerous occasions, both in hospital and in private, without any but the most trifling inconvenience to the patient. While fully alive to the value of iodide of potassium in the absorption of the neoplasms of advanced syphilis, I do not think it can ever take the place of mercury in its early treatment. The words of Wallace, who introduced it, are: "He was not going to dispossess mercury of its well-earned high rank in the treatment of syphilis, but that we had in iodide of potassium a remedy completing our circle of therapeutics." A few words in allusion to two varieties of the disease—I should rather describe them as types—occur-

ring in individuals completely unprotected by influences which confer partial immunity. One, malignant syphilis; the second, where tertiary symptoms appear at an early period of systemic infection—*syphilis tertiare précocæ*. I will briefly illustrate them by two cases. A woman, aged forty-five, the mother of seven children, was admitted into No. 9 Ward, Steevens' Hospital. The history was unreliable. There was on admission a rupial ulcer on the back of the forearm. On close examination I found a small induration at the cleft between the thumb and index finger. Within a fortnight throat and nasal symptoms were advanced; all the accessible lymphatics were found to be enlarged and indurated; a node developed on the frontal bone, followed by rapid destruction of the soft parts; almost the entire frontal bone exfoliated. Dr. Donnelly saw the case at my request. Rapid cachexia supervened, and she died from exhaustion.

Syphilis Tertiare Précocæ.—A man, aged twenty-eight, at present in No. 2 Ward, was admitted with a hard sore on the glands. Within a fortnight he was covered with rupia. I have never seen such an example. He looked as if limpet-shells were pasted on to every available portion of skin. His appearance was remarkable, and he served as a moral and warning to careless youth. He became very cachectic. The usual anti-syphilitic remedies were used. Mercury, the iodides, and a combination of both, were given without avail. At last I ordered him the tabloids of thyroid extract, and like a charm his sores were healed. He grew fat and strong, and is now practically well. The original sore is still indurated. I have no explanation to offer as to the result in this case.

ART. XXI.—*Observations on the Treatment of the Third Stage of Labour, especially as regards the Delivery of the Placenta.** By GEORGE COLE-BAKER, M.D., &c., Univ. Dubl.; University Examiner in Midwifery and Gynæcology in the University of Dublin, 1896 and 1897; Ex-Assistant Master, and Ex-Master *pro tem.*, Coombe Lying-in Hospital, Dublin.

JEWETT in the "American Text-Book of Obstetrics," edited by Norris, says:—"Not the least important duties of the obstetrician in the conduct of natural labour fall in the third stage. Upon the skill and attention given to this period the immediate safety of the woman and the rapidity and completeness of her recovery will often in great measure depend." With this statement I more than agree, for instead of the word "often" used above I should feel inclined to substitute the word "invariably" (provided always nothing abnormal has arisen at any previous stage of the patient's labour), and to me the conduct of the third stage has always been a time of very great anxiety, and in very many cases of dissatisfaction.

I use this last word because in no text-book on obstetrics that I have read—there are, of course, many that I have not read—have I seen described what I can call a perfectly satisfactory method of treatment for this stage of labour, as far as the delivery of the placenta and membranes is concerned.

In this country the latter part of the second stage is always conducted with the patient lying on her left side, and it is now the practice to turn her upon her back immediately it is concluded. This is undoubtedly good treatment for two reasons at any rate—(1) the obstetrician can "control the fundus," as the phrase is, much more effectually and with much less physical effort than in the lateral position; and (2) the change of position is most acceptable to the patient.

Other advantages are claimed for the proceeding, one

* A Thesis read before James Little, M.D., Regius Professor of Physic in the University of Dublin, on June 28th, 1899.

being that air is less likely to get into the uterine cavity in the dorsal than in the lateral position. This may be true, but only in so far as the fact that the uterus can be better "controlled" in the former than in the latter position of the patient; and if this control be not exercised, and the uterus be allowed to relax and its cavity to enlarge, air or blood will rush in to fill the vacuum thus created when the patient is on her back just as readily as when she is on her side, and if it does enter in the latter position it is not the position that is at fault, but it is because control of the uterus has not been properly exercised or not commenced sufficiently early.

This control of the uterus should be commenced the moment the head or any portion of the trunk of the child has passed the vulva, and should not be relaxed for a single moment till the placenta and membranes have been completely delivered, and the uterine muscular fibres are thoroughly well contracted. "Till the last pin of the binder is inserted," say some, but in my opinion this is often much too soon, and in the vast majority of cases just as good results would be arrived at if the binder were entirely dispensed with.

No doubt the binder is pleasant and gratifying to the patient, and gives her a feeling of support, especially if she habitually wear a tight-fitting corset, but here its utility ends in most cases, I believe; and not only that, but very tight application of binders with the idea of "preserving the figure" is probably responsible for many of the retroversions that are so common after a confinement.

I was first induced to think the binder a "luxury," not a "necessity," in very many cases in the following way:—A gentleman of my acquaintance who went in for horse-breeding (hunters especially) had a plan of putting his fillies to stud when they were two years old, and did not train them till they had had a couple of foals, and yet they always made up as fine and looked as slim and well as if they were nulliparæ, and as far as the binder is a preventive of *post-partum* hæmorrhage, I ask, how often do we hear of this occurring among the lower animals?

We now come to ligation of the cord; but it is not my

intention to discuss the various arguments as to early or late ligation save to say generally that each individual case appears to be more or less "a law unto itself," and that no hard-and-fast rule can be laid down that will embrace every case. My experience is that the best results are arrived at by postponing ligation so long as strong pulsation exists in the cord, and the new-born infant is vigorous and lusty, and apparently doing well on it.

Up to a few years ago it was customary to ligature the cord in two places only—viz., one ligature at about one and a half inches from the umbilicus, and the other at about two inches from the first, on the maternal side of it, and then to divide the cord between them. Of late years, however, it has become the practice to ligature the cord in a third place—i.e., "as close as possible to the vulva," or else to put the second ligature alluded to above in this position instead of two inches only from the first ligature.

If this latter plan be adopted, needs must that when the cord is severed a considerable quantity of (certainly some) blood must escape owing to the length of cord between the ligatures, and unnecessary soiling of the bed-clothes and infant is the result. It is easy to render two inches of cord bloodless by pressure, but difficult if not impossible to do so with several inches. I am, therefore, strongly in favour of applying a third ligature—i.e., the old second one—at two inches from the first and on the maternal side of it.

To return, however, to the ligature "as close as possible to the vulva"—its object is to be an index to us that the placenta has left the uterus and is lying in the vagina. That it may be of use as an indicator of this fact, however, it is necessary to observe two precautions—the first (which is mentioned in a text-book that is before me) is, care must be taken, by making very gentle traction on the cord, that there are no coils of it in the vagina which may subsequently slip out, and induce us to think that the placenta must have left the uterus by the distance our ligature has moved from the vulva. The second precaution I have never seen mentioned, but learned it from personal experience, and have since seen the neglect of it mislead others more than

once. It is this—care must be taken that the placenta is not *already in the vagina* when the ligature is applied.

Very often the same pain that completes the second stage of labour forces the placenta after the child into the vagina, and if this be the case the value of the third ligature on the cord as an indicator becomes *nil*.

In addition to the “artificial” indication just mentioned, that “the placenta has left the uterus,” there are four other “natural” ones. It will be noticed, if the controlling hand on the fundus does not keep the uterus, as a whole, jammed down into the pelvis, as soon as the placenta has been expelled by the uterus—(1) that the fundus of the latter occupies a slightly higher level in the abdominal cavity than it did at the end of the second stage; (2) that the uterus becomes distinctly flattened from before backwards; (3) that the uterus becomes more easily movable in the abdominal cavity; and (4), most valuable sign of all, that there is a distinct bulging forwards of the abdominal parietes just above the symphysis pubis, appearing to the eye exactly like a distended bladder, but having a very different feel—viz., a spongy or boggy feel.

The knowledge that the placenta has left the uterus is important, as we now know we may complete its delivery without further delay with perfect safety to the mother.

As labour itself is divided into three stages, so may the delivery of the placenta be said to consist of three steps—viz., (1) the passing of the placenta from the uterus to the vagina; (2) from the vagina outside the vulva; (3) the complete detachment and delivery of the foetal membranes after the placenta has passed the vulva. These several steps may be effected by (1) nature, or (2) artificial means; and nature may accomplish any or all of these very quickly or extremely slowly.

The question now arises—how long is nature to be left to herself, and how are we to assist her if we elect to do so? As I have said, nature is sometimes very slow about her work, and nowadays I fear neither doctor nor patient would in very many cases be willing to await her will and pleasure, so long as matters can be hastened with perfect safety to the patient. It is customary at the present day to give nature

a limited time—from 30 to 45 minutes, provided no contra-indication arises—to accomplish the first step of forcing the placenta out of the uterus, and once this has been done to resort to artificial means of various kinds to complete the second and third steps.

Of course, in very many cases nature accomplishes one or all of the steps of the third stage of labour in a shorter time than the limit of time above mentioned, and once she has accomplished the first step the midwife may at once resort to artificial means to complete delivery, as no advantage to the patient is gained by waiting, whereas extra difficulty in accomplishing the third step may be caused by delay.

I shall not discuss indications (such as profuse hæmorrhage from the uterus) which may necessitate the rapid termination of the third stage, nor shall I more than allude to those cases where either the placenta or membranes, or both, are so intimately adherent to the uterine walls that they can be removed only by the introduction of the hand into the uterus.

If nature accomplishes *all* the steps, so far so good; but let us assume that our forty-five minutes' "time limit" has expired, the patient certainly and, it *may* be, the doctor are anxious to have it all over—what is to be done? Ninety-five, if not one hundred, per cent. of the obstetricians of to-day would reply, "Express the placenta," and probably add, "by Credé's method."

Undoubtedly the proper treatment, I admit; but what is Credé's method? The description of it given in the text of many treatises on midwifery is, to say the least of it, rather involved, and some of the illustrations (notably in "Lusk's Midwifery," third edition, p. 224) are positively misleading, in my opinion. The best descriptions I have seen are to be found in "Spiegelberg's Midwifery" and "The American Text-book of Obstetrics," and there is an excellent photograph of the manipulation of the method in the latter. But even these are not quite satisfactory, for this reason—As far as I can see, Credé's method of "expressing" the placenta (just as nature herself may do) *may* accomplish all, only two, or only one of what I have called the three

steps of the third stage of labour; but it may accomplish the first step *only*, as I say; and my point is, that here Credé's method comes to an end. It is erroneous, therefore, to say that "once the placenta has passed from the uterus into the vagina, Credé's method is a useful one of effecting its further delivery." Credé's method is a method of "expression," while to use the empty uterus to push the placenta through the vulva out of the vagina, by pushing it (the uterus) forcibly down into the vagina (as advocated by some obstetricians), telescopic fashion, should more correctly be called a method of "detrusion."

When teaching nurses and students how to "express the placenta" from the uterus into the vagina (or completely, as the case may be), and what sort of pressure to exercise upon the uterus, I have always illustrated my lecture by an indiarubber enema bag, and told them to squeeze the uterus between the thumb placed on the anterior wall and the fingers (sunk well down behind the fundus and spread out over the posterior wall), just as they would the enema bag, and that thus the placenta, if detached, would be shot out of the uterus, much in the same way that we can shoot an orange pip across a room by squeezing it between a finger and thumb.

My own experience is that any forcing downwards and backwards of the uterus as a whole, by pressure of the palm of the hand upon the fundus, is wholly unnecessary, if not sometimes injurious, as I have more than once seen a partial prolapse of the uterus (both while it still contained the placenta and where it was used as what I shall call a "detrusor"), brought about by vigorous and energetic students in their efforts to carry out what they believed to be Credé's method of "expression" of the placenta. So much for the treatment of the first step of the third stage.

As regards the treatment of the second step—"Vis a tergo non a fronte" is the almost universal motto of the obstetricians of to-day, but I cannot say that I look upon the use of the uterus as a "detrusor" of the placenta as being an ideal method; and where more than a very slight degree of force is required, or where the operator is inexperienced, it is, in my opinion, inadmissible. Once the

placenta has left the uterus, I fail to see that there is any reasonable objection to drawing it out of the vagina by gentle (and this will suffice) traction either on the cord or exerted directly upon the placenta by a large, smooth ring forceps; and, more than that, am inclined to think that "traction" at this stage much more nearly resembles what nature intended than does "detrusion." The patient can materially assist in the procedure by "bearing down" and coughing.

It is scarcely necessary for me to say that in carrying out either of the above proceedings the hands of the midwife and his instruments must be (as they must at all times be) absolutely aseptic.

We now arrive at, to me, the most unsatisfactory of all the steps—*i.e.*, the third and last one of the third stage.

One method of treatment is to turn the patient back again into the lateral position, or the "cross-bed" position (the placenta being carefully supported the while to avoid tearing of the membranes), get her hips well out over the side of the bed, and allow the weight of the placenta to deliver the membranes by which it depends. This, I confess, appears to me to more nearly resemble nature's method than any other; but I have not found it successful in all cases, especially in those where the placentæ are large and the membranes unusually friable, as is sometimes the case.

Nature only fails us here because we have, so to speak, interfered with and thereby insulted her earlier in the labour. I do not necessarily mean actively, but by having become the "civilised" human beings we are and in the process turned parturition into an artificial rather than a natural proceeding. The method, therefore, of supporting the placenta, allowing no weight or traction on the membranes, and detaching and delivering the latter by torsion, and, perhaps, a suspicion of traction on them, seems to give better results, but it is not absolutely satisfactory.

If too little torsion be made, the membranes may not become entirely detached; if too much, there is great danger that a larger or smaller portion, which may not be missed even on the most careful examination of the placenta, will be retained to the possible danger of the patient.

Again—and I now come to a difficulty which I have met with, but never seen or heard mentioned—it is this. A labour has been absolutely normal from the commencement to the end of the second step of the third stage, but, arrived there, wheedle and coax the membranes as you will they will not budge. What has happened? The uterus has become firmly contracted (a condition that is in every way desirable in most cases), and the membranes are nipped by it so tight at the internal os that escape they cannot. Sometimes, if you are very patient, the uterus will relax its grip, the membranes slip through, and all will be well, but frequently I have known the internal os hold on relentlessly, and there was nothing for it but to introduce one or two fingers up to or through the internal os, and thus induce it to let go its hold. This simple fact—I mean being compelled in some cases (very few, perhaps, it may be said) *volens volens* to introduce even one finger into the vagina, let alone the cervix—dispels my notion of the ideal. How is it to be avoided? I confess I do not know.

As to the mode in which the placenta is normally delivered, whether foetal surface first, with the membranes inverted, or edgeways, is a matter of trifling importance, but I am inclined to think that the latter is the more usual, and, at any rate, the more natural.

Whether the cord be pulled upon or not, the formation of a hæmatoma behind the placenta assumes that the placenta is more adherent at its margins than elsewhere, and evidence of this fact is not forthcoming, as far as I am aware. Against Schultze's theory, too, is the fact that, if it were correct, the delivery of the placenta and membranes would always be followed by the delivery of a blood clot of greater or lesser magnitude, and this most certainly is not so. On the other hand, the assertion of Matthews Duncan that the placenta is never delivered foetal surface first, unless some traction has been made upon the cord, appears to infer a more or less central insertion of the cord, and this is not always the case, even when the foetal surface does present and the membranes are inverted. The method of the delivery of the placenta seems to be depen-

dent entirely on its "site" in the uterus. So much for the "delivery" of the placenta.

I now come to the means by which the placenta is "detached" from the walls of the uterus, and this is interesting, inasmuch as it is effected by two distinctly opposite processes, according as the placental site is in the upper (contractile) or lower (distensile) uterine segment. I found it extremely difficult to make students or nurses comprehend these processes till I hit upon the following simple expedient:—Having procured two indiarubber toy balloons, the one distended with air, and the other collapsed, I gummed a piece of paper on each. I then punctured the distended one, and inflated the collapsed one, with the result that in each case the bits of paper were at once detached—in the one case, because the surface to which it was adherent had become too small to hold it (as does the upper uterine segment); in the other, because the opposite had happened, the surface of the balloon (as does the "lower" uterine segment during labour) had become too distended for the bit of paper to cover.

In conclusion, I shall merely enumerate the points to which I desire to call attention. They are as follows:—

1. The great importance of the careful treatment of the third stage of labour, and unceasing control of the uterus from just before the commencement of this stage of labour till it is concluded, and afterwards if necessary.

2. The binder in many cases is a luxury, and superfluous.

3. The advantages of three ligatures on the umbilical cord, with some precautions to be observed in their application.

4. That Credé's method of expression relates only to the first step of the third stage.

5. That traction (*vis a fronte*) is equally good, if not preferable, treatment to "detrusion" in the second step of third stage.

6. That an ideal and perfectly satisfactory treatment for the third and last step of the third stage has yet to be described.

ART. XXII.—*Innominate Aneurysm.** By JAMES CRAIG, M.D.; Physician to the Meath Hospital.

THE case which I desire to bring under the notice of the Academy is that of a gentleman who suffered from an aneurysm of the innominate artery, which has become entirely quiescent after a long period of marvellous patience and dogged perseverance in carrying out the principles of treatment by rest, a moderate quantity of food, and large doses of iodide of potassium.

To Dr. Little, who is his usual medical attendant, I am indebted for permission to relate the case.

CASE.—The patient, aged sixty-five, has been twice married, is the father of five children, two of whom are the product of his second marriage. He has suffered as long as he can remember from bilious attacks, which he considers to be of a gouty nature, and accordingly, in treating them as such, he has been for many years a disciple of the vegetarian school of dietary and a patron of all that wide class of non-alcoholic beverages which goes by the name of mineral waters. He is positive that he never contracted syphilis. During a number of years past he has spent from six to eight weeks annually at one or other of the Continental spas, notably Carlsbad and Marienbad. He has led a busy life since his youth, for after a short career as an apothecary's assistant and as a medical student, he then settled down to make money, and in this praiseworthy avocation he has been eminently successful. The knowledge of therapeutics which he acquired in his younger days formed an unstable basis on which he has ever after been attempting to build a fabric of medical lore, so that one might perhaps truthfully suggest that *here* the little learning had indeed become a dangerous thing. He reads his *British Medical Journal* more assiduously than his Bible, and no volume of modern fiction could arouse in his mind a fraction of the interest which a treatise on aneurysm or diet calls forth.

I mention these facts because in the management of the case one had to give reasons for everything that was done, and endeavour to lay to rest a spirit of theorising which is never helpful to recovery in any form of disease.

Physically he is spare, looks older than his years, but is remark-

* Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, December 16, 1898.

ably energetic. His face is of a dull yellowish-grey colour, and suggests a nervous temperament.

He has been subject to constipation since his boyhood, and he attributes the actual cause of the aneurysm to the violent straining efforts he forcibly induced in order to secure a motion from the bowels on June 11th, 1897. That night he felt a pain in his chest, for which Dr. Little was consulted three days subsequently. The latter saw him on several occasions at this time, which was just on the eve of his summer holiday, but no manifestations of aneurysm had then made their appearance. On June 23rd Dr. Raverty, of Bray, who had been his family attendant in the country, was called in, and believing that the signs of an innominate aneurysm were presenting themselves he called to his aid Mr. Wheeler's skill, and the latter confirmed his diagnosis, but deemed any operative interference to be inadvisable. Iodide of potassium, morphia, trinitrin, and calomel were ordered. A week later—on June 30th—I saw the case with Dr. Raverty, who, at the patient's own request, transferred him from that date to my care. I concurred at once in the diagnosis, but at the same time expressed a fear that the arch of the aorta itself was also dilated on account of the manner in which the right carotid and subclavian arteries were pushed upwards.

On Inspection there was a distinct pulsating tumour pushing forwards the right side of the manubrium sterni, the second right costal cartilage, and the inner end of the right clavicle, which, indeed, was partially luxated in a forward direction. The superficial veins in this region were distended as well as the veins in the right side of the neck and in the right arm. The right subclavian artery was visibly pulsating above the clavicle.

On Palpation the expansile character of the tumour was conveyed to the hand, and a thrill could be detected. The right radial pulse was somewhat smaller and appreciably later in time than the left. There was no tracheal tugging to be felt.

On Percussion a dull note was elicited over the seat of the tumour, and it extended for an inch to the right of the manubrium sterni, and an inch and a half downwards in a vertical direction from the right sterno-clavicular articulation.

Auscultation revealed a systolic bruit over the seat of the pulsating tumour.

He complained of a throbbing sensation in his chest and neck, as well as violent pains of a more or less spasmodic nature which radiated from the upper part of the thorax towards the neck, the

back of the head, and down the right arm. He was fidgety, sleepless, and excitable. His tongue was coated, his pharynx was painful and congested, his voice at one time was weak and at another hoarse. He lay day and night in bed between woollen rugs, and was clothed in warm combinations, long stockings, and a dressing gown.

I increased the iodide of potassium to 20 gra. thrice daily, applied three leeches at once and subsequently ice bags to the tumour; ordered a draught of chloral hydrate and bromide of potassium to procure sleep and to counteract the restlessness. He refused point blank to make use of any meat, so his diet was fixed at about two pints of fluid nourishment in the 24 hours, consisting chiefly of milk and gruel, with pellets of ice to relieve thirst, and a liberal supply of grapes and ripe pears or other fruit.

Sir. C. Nixon and Sir Wm. Stokes saw him with me in the course of the next fortnight, and they entirely agreed in the diagnosis and treatment, except that Sir Wm. Stokes suggested $\frac{1}{4}$ gr. hypodermic injections of morphia to be administered at night in place of the draught of chloral.

I need not weary the Academy with all the varying details of the case during the months of July and August. The morphia was stopped at the end of four weeks. The pulse was carefully watched, and although it became at times both irregular and intermittent and greatly increased in rhythm on the slightest exertion or excitement, its usual average was 74. At intervals, when the pulse became continuously rapid or a crop of acne spots appeared on the skin, the iodide was stopped. Occasionally the temperature went up to 100° or 101° F., but more usually, when a feverish state was complained of, it was found that the thermometer registered a subnormal range. Once under great persuasion he partook of an ounce of roast chicken, and the result, according to his own account, was most injurious.

Marienbad salt was taken early every morning and was followed in a few hours by one or two fluid evacuations from the bowels. About the middle of August, and then for several days in succession, the tumour showed signs of quiescence, but the pulsation again became vigorous and dashed our hopeful expectations to the ground.

Towards the end of the month, however, I was satisfied

that the tumour had become distinctly smaller, although the pulsation had not disappeared. I had arranged to leave town on the 1st of September in order to spend a fortnight in the country, and on several occasions before my departure he was moved to a lounge chair, where he remained for a few hours at a time. This was done because he had all along insisted that he must betake himself to the Riviera in the middle of September, and I had promised that in order to prepare him for the journey he should be allowed to sit up at the termination of two months in bed, whether or not solidification had taken place in the aneurysm. During my absence he was still to continue the treatment as before, but was to be lifted on to a rocking chair and remain there for a few hours daily.

I did not see him again after my holiday, but Dr. Little, who had returned to town in the meantime, saw him before he started for Monte Carlo on the 17th of September. Dr. Little then ordered him a mixture containing chloride of calcium and advised the application of small blisters over the seat of the tumour. The chloride of calcium was persevered in at intervals for a period of only three weeks, because, as the patient subsequently explained to me, "although it seemed to solidify the aneurysm it raised the arterial tension."

He remained at Monte Carlo for three months and during all that time his programme was unvarying, and carried out according to his own specific directions as follows :—

Diet—One pint of milk flavoured with coffee was partaken of four times a day, with a roast apple as a second course on each occasion.

Medicine—From 15 to 30 grs. daily of iodide of potassium were taken in milk, and a dose of Marienbad salt was the unfailing laxative used each morning.

General—The entire day was spent in the garden of the hotel in a comfortable American rocking chair with a long back and a long seat, and to this place of rest he was carried from his room in the morning and back again at night, so that walking was not attempted.

During these months he considers he got gradually free from all the symptoms.

At the beginning of the present year he went to the Italian Riviera, and here he began to walk about. In February he paid a visit to Dr. Little, who was then in Nice. Later on he migrated to his beloved Marienbad, where he indulged in plenty of walking exercise and became less abstemious in regard to his food, and here, too, he felt free from all his troubles, although he still continued to use the iodide of potassium.

He returned to Dublin during the autumn, and in November, 1898, 18 months after the onset of his symptoms, I put him through a careful examination, and unless for a slight prominence and diminished resonance where the tumour had existed there was absolutely no physical signs of an aneurysm to be found. He looks older and has acquired a slight stoop in walking, otherwise he is in excellent health and spirits, has increased in weight, and is capable of the average amount of physical exertion. In his pocket he carries small phials of iodide of potassium in solution, and as the spirit moves him he swallows a dose, just as if it were the elixir of life.

GEOPHAGY.



THE habit of eating earth, or geophagy, as it is technically called, is more widespread than is generally supposed. In some parts of Germany a fine clay is spread upon bread, under the name of stone-butter. In upper Italy and in Sardinia earth is sold in the markets. In the extreme northern part of Sweden and in the peninsula of Kola an earth composed of infusoria, and called mountain flour, is baked in bread. In Persia earth is used in the manufacture of certain sweetmeats. In tropical regions the use of earth as an article of food is well known; but it is also employed as a medicine in Nubia, and among different tribes its use has a religious meaning as well. Many explanations are offered for such a widespread custom. It is not impossible that these various earths have more or less flavour, and that they supplant to a certain degree the use of salt.—*Medical News*, June 3, 1899.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

The Principles which govern Treatment in Diseases and Disorders of the Heart. The Lumleian Lectures delivered before the Royal College of Physicians, London. By SIR R. DOUGLAS POWELL, M.D. Lond.; Physician-in-Ordinary to Her Majesty the Queen; Physician to the Middlesex Hospital, &c. London: H. K. Lewis. 1899. Pp. 118.

THESE lectures are well worth reading. They contain nothing that is startlingly new; they are not the product of a young man in search of notoriety. They are, on the contrary, the careful review and quiet outcome of the experience of a physician of many years' standing in his profession; and it is precisely such experience that a writer needs who takes in hand to write on the subject of the treatment of heart disease. The progress of gradual heart failure is so slow that many cases must be watched for years before the physician in charge can arrive at really reliable and valuable conclusions.

The first lecture treats of cardiac disorders which depend on or have some relation to some lesion of the nervous system, such as cardiac neuroses, exophthalmic goitre, tachycardia. Sir D. Powell has very little opinion of the efficacy of drugs in the latter two conditions; in Graves's disease his recommendation is "imprisonment for six months, and under surveillance for from two to five years afterwards."

The second lecture treats of acute inflammatory diseases of the heart and their treatment. The author's remarks on the necessity of prolonged rest after a recent endocarditis are weighty and valuable; and not only so, but he also shows how complete rest in rheumatic fever diminishes in a great degree the tendency to heart complications. The sections on heart failure are good; the chief blot which we have

noted is that there is no reference to the value of mercury, whether in the form of Baly's pill or in some other combination, in cases of heart failure associated with engorgement of the venous system and dropsy.

In the third lecture Sir D. Powell considers the use of exercise in the treatment of heart disease. He considers the graduated exercises of Schott, Oertel, and others, useful in certain cases; but he considers that in many individuals ordinary exercises may be as useful as these systems. In the case of young people—"I think," he writes, "special heart exercises are better avoided: we do not want to make heart 'crocks' of our young people." He gives a table of 14 cases of septic endocarditis treated with antistreptococcic serum, with three recoveries. He has also made use of hypodermic injections of yeast culture in a few cases of this disease, and, although the cases are too few to admit of positive conclusions being drawn from them, he seems inclined to think the treatment is a useful one.

Golden Rules of Medical Practice. By A. H. EVANS, M.D. Lond.; House Surgeon, Westminster Hospital. Bristol: John Wright. 1899. Pp. 71.

THIS little work contains a number of rules relating to medical topics. We do not think it would be at all difficult to bring together a second series of rules, equal in number to those in the work before us, and equally "golden" in quality. We believe that the man who really knows his work will not need such a book as this; while he who is ignorant had much better try to learn something rather than trust to such a pocket companion as these "Golden" Rules.

Rough Notes on Remedies. By WM. MURRAY, M.D., F.R.C.P. Lond., Newcastle-on-Tyne. Third Edition. London: H. K. Lewis. 1899.

THIS booklet of 142 pages deals with some of the items of an exceedingly interesting department of scientific observation. The author modestly observed in the preface to the former issue of this little work—"However much it may

fail in detail I feel assured that the main lines of this inquiry are in the right direction. If these lines of investigation were followed by others, who have time, opportunity, and experience, it would inevitably lead to an enhanced view of our old remedies, which have too often been regarded as exhausted of all their virtues by previous research. To prove that our knowledge of these old-fashioned drugs is *not exhausted*, may lead to renewed inquiry on the part of many who now hide their light under a bushel, and never disclose their experiences."

Those who have given most earnest and anxious attention to the subject best know how frequently physical explanations of facts and phenomena are deplorably at fault when attempts are made to apply them without special limitations to the modification of the functions of the human body, whether in health or disease. Accordingly, humiliating as the fact is, it is not the less true that our best knowledge of our best therapeutic remedies is purely *empirical*. With this dogmatic statement of our own, we cordially recommend the perusal of Dr. Murray's remarkable series of clinical and therapeutic facts to the notice of every earnest student of his profession.

The Diseases of Children: Medical and Surgical. By HENRY ASHBY, M.D. Lond., F.R.C.P., Physician to the Manchester Children's Hospital; and G. A. WRIGHT, B.A., M.B., Oxon., F.R.C.S. Eng., Surgeon to the Manchester Children's Hospital. Fourth Edition, thoroughly revised. London: Longmans, Green & Co. 1899. 8vo. Pp. 872.

THE fourth edition of this excellent and popular work has been carefully revised and brought up to date. It is now one of the best illustrated works on diseases of children in the market, for twenty-five new photographs and fourteen plates, chiefly of skiagraphs, have been added to the numerous plates and drawings in previous editions. Some sixty pages of new matter have also been added to the text.

We notice that Mr. A. Wilson, F.R.C.S., has re-written

the chapter on Anæsthetics for Children—a difficult subject, which he has ably handled.

There is little, if anything, to call for hostile criticism in this new edition of a work which has long since come to be an acknowledged authority on the sad and pathetic subject of which it treats.

Manual for the Church Lads' Brigade Medical Corps.

London: Church Lads' Brigade. 1899. Pp. 122.

THIS little manual (which is founded on the S. John Ambulance Handbook) deals with Elementary Anatomy, Bandaging, First Aid, Stretcher Drill, and Camp Arrangement and Routine. It is very well drawn up, clearly printed, and well indexed.

The Medical School Calendar for Scotland, 1899-1900.

Edinburgh: E. & S. Livingstone. 1899. Pp. 439.

THIS guide unravels the somewhat complex arrangement of licensing bodies in Scotland, and traces out the course of study for each. The most interesting portion for readers outside Scotland is the large and well-arranged collection of Examination papers.

The Medical Annual Synoptical Index to Remedies and Diseases.

For the Twelve Years 1887 to 1898. Bristol: John Wright & Co. 1899. 8vo. Pp. 451.

WHETHER the happy purchaser of this book possesses, or does not possess, a complete set of the volumes of the "Medical Annual" for the past twelve years to which it supplies an index, is to some extent immaterial. In either case this "Synoptical Index to Remedies and Diseases" will prove to him a mine of information. The Editors, or the publishers, have aimed, and not unsuccessfully, at producing a volume which will fulfil all the requirements of an ordinary index and at the same time contain in a very condensed form these facts which are likely to be wanted for reference in everyday practice.

In the first place, a complete index to the twelve volumes has been compiled by arranging all subjects under those headings which would most likely attract the practitioner in search of them. Next, to each article has been added a chronological synopsis of the suggestions respecting treatment which have year by year been made by the specialists who write the original articles in the "Medical Annual," or which have appeared in the medical press.

The book is arranged as follows:—Part I. supplies an index to new remedies and old remedies with new uses. It extends to 92 pages. Then 291 pages are devoted to "Diseases" in Part II. The remaining contents are—alterations in the British Pharmacopœia, 1898; test-types by Percy Wilde, M.D. (a reprint from the "Medical Annual" for 1887); pages for memoranda, and a short supplementary index.

The price of this useful work is seven shillings and sixpence net.

Medical Gymnastics, including the Schott (Nauheim) Movements; being a Text-book of Massage and Mechanical Therapeutics generally. By AXEL V. GRAFSTROM, M.D. London: The Scientific Press (Limited). 1899. Pp. 139.

THIS manual teaches clearly and concisely, as far as print can teach, the different methods of massage. The author, however, with the cheerful optimism so often observed in specialists, gives a widely-extended list of conditions in which mechanotherapy is useful.

For example:—To avoid difficult labours massage is to be used, so as "to carry the increased nutrition towards the mother's muscular system—that is, from within outward. By this the development of the foetus will be retarded, and after a normal and comparatively easy labour a normal-sized child will be born." Probably the words "normal" and "normal-sized" in the above paragraph are more exactly correct than the author intends!

The treatment recommended for nocturnal incontinence of urine in young children is complicated, and of an objectionable nature. Indeed the treatment of several conditions—

chronic seminal vesiculitis, for example—might well be omitted.

Although in the treatment of strangulated hernia massage is only another name for "taxis," the other name is a dangerous one, as massage is undertaken by a much wider circle than would resort to taxis.

South African Health Resorts. The Voyage to South Africa and Sojourn there. London: Donald Currie & Co. 1899. Pp. 145.

THIS handsome advertisement contains papers on "The Climate of South Africa" (Dr. Alfred P. Hillier), "The Cape as a Health Resort" (Dr. C. Lawrence C. Hirman), "South Africa as a Health Resort" (Dr. E. Symes Thompson), and a number of chapters dealing with the voyage, means of getting about, hotels, and so forth. There are also appendices containing extracts from papers and books touching on South Africa as a health resort, and there is a good bibliography which will be of use to intending travellers. The maps and illustrations are excellent, and medical men will get many hints as to when and whither they should send out patients—*when the war is over!*

The Medical Digest, or Busy Practitioner's Vade-mecum. Appendix, including the years 1891 to March, 1899. By RICHARD NEALE, M.D., Lond., Member of the Dutch Medical Society of Batavia, Java. London: John Bale, Sons & Danielsson. 1899. 8vo. Pp. 261 + xxxiv.

IN his Preface Dr. Neale explains that this second Appendix to his well-known "Medical Digest" has been incorporated with the Appendix published in 1895, in order to facilitate reference. The journal called *Clinical Sketches* had been already (in 1895) added to the periodicals included in the Digest.

To make proper use of the Appendix, the Index of the edition of 1890 must first be consulted for any given subject, and then the corresponding section in the Appendix must be referred to in order to see whether any fresh matter has

been added. If the Index of 1890 does not refer to the subject sought for, the inquirer must turn to the Appendix Index, in which new subjects *alone* are noted.

In undertaking and carrying to a successful issue his herculean task of reference Dr. Neale has conferred a boon on the medical reading world. We have often had occasion to consult the Medical Digest, and never without obtaining the information for which we sought.

A Manual of Otology. By GRAHAM BACON, A.B., M.D., Professor of Otology in Cornell University Medical College, New York; Aural Surgeon, New York Eye and Ear Infirmary. With an Introductory Chapter by CLARENCE JOHN BLAKE, M.D., Professor of Otology in Harvard University. With 110 Illustrations and a Coloured Plate. London: Henry Kimpton. 1899.

THIS beautifully printed and well illustrated little volume forms an important addition to the very convenient and tastefully prepared series of professional manuals which have been published of recent years by Mr. Henry Kimpton. It includes 398 pages, of which the last 12 are occupied by a good index. Chapters I. and II. deal respectively with the "Anatomy and Physiology of the Ear" and the "Methods of Examination of the Ear;"—they are written in an exquisitely lucid style, and form an admirable introduction to the body of the work. Twelve other chapters deal with the various morbid conditions of the Auditory Apparatus. The last of these (Chapter XIV.) is on the interesting subject of Deaf-Mutism.

The author modestly tells us in his preface that he has "especially tried to meet the demands of the student by giving him a short and compact treatise of the subject, and at the same time affording him a book of easy reference, since he may not always find the time necessary for consulting the many excellent and more exhaustive treatises upon otology which have been published not only in this country, but also in England and on the Continent.

"In a work of this character it is impossible to describe all the operations mentioned in the larger treatises on

aural surgery, but a sufficiently full consideration is given to those particular diseases of the ear with which the student and practitioner will frequently meet to enable them to properly understand the condition and apply the appropriate treatment. So far as is possible, I have been guided in the selection of material by the results of my own experience. I can fairly claim for the volume the merit of practicability."

We entirely endorse the very unpretentious account given in the above quotation. In the beautifully clear style, which seems to be a special gift of our transatlantic *confrères*, Dr. Bacon gives a necessarily short, but lucid and suggestive account of the causes, symptoms, complications, and treatment of the principal morbid conditions of the auditory organs. It is obviously the work of a master of his specialty; and the results of his personal experience are laid before the reader without a trace of the pretentious dogmatism which so often irritates during the perusal of works of this kind. We consider the volume an excellent introduction to the important subject with which it deals, and cordially recommend it to the attention of every student and general practitioner.

Year-Book of the Scientific and Learned Societies of Great Britain and Ireland. Comprising Lists of the Papers read during 1898 before Societies engaged in Fourteen Departments of Research, with the names of their authors. Compiled from Official Sources. Sixteenth Annual Issue. London: Charles Griffin & Co., Limited. 1899.

THE present issue of this excellent annual gives—(1) an account of scientific work done by the various departments throughout the year; (2) a record of progress. It is a convenient handbook of reference.

In most instances the lists of papers have been contributed directly by the Societies. Where papers are not given, their absence is often to be attributed to the fact that the society in question does its work in another way. The names of those societies concerning which no information has been received are entered in the index only.

The value of the work to those engaged in scientific work can hardly be overrated, and there is no one engaged in literary work to whom it may not be useful.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Vol. IV. D.—Emulsions. Washington: Government Printing Office. 1899. 8vo. Pp. 917.

MAJOR JAMES C. MERRILL, Surgeon, U.S. Army, and Librarian in the Surgeon-General's Office, informs us that this, the fourth, volume of the second series of the Index-Catalogue of the Library of that office includes 9,628 author-titles, representing 4,133 volumes and 8,523 pamphlets. It also contains 8,828 subject-titles of separate books and pamphlets, and 28,316 titles of articles in periodicals.

The Library of the Surgeon-General's office now contains 130,708 bound volumes and 220,839 pamphlets. It must thus be the largest medical library in the world.

LITERARY NOTE.

MESSRS. REBMAN, LTD., announce the following new books for immediate publication:—Vol. 1 of "An International Text-book of Surgery," by British and American authors, in 2 vols, edited by A. Pearce Gould, M.S., F.R.C.S., of the Middlesex Hospital, and J. Collins Warren, M.D., LL.D., of Harvard Medical School. A new "Text-book of Diseases of the Nose and Throat," by D. Braden Kyle, M.D., of Philadelphia. A work on the "Hygiene of Transmissible Diseases," by Dr. A. C. Abbot, of Philadelphia. One on the "Pathology and Treatment of Sexual Impotence," by Victor C. Vecki, M.D. Also the following:—"A Text-book of Physiology," by Prof. Winfield S. Hall, of Chicago. "Minor Surgery and Bandaging," by Henry R. Wharton, M.D. (4th ed.) Vol. 1 of "A Text-book of Surgical Anatomy," by Professor John B. Deaver, of Philadelphia. Messrs. Rebman also announce as in the press new editions of Dr. Freyberger's "Pocket Formulary for the Treatment of Diseases in Children." Mr. Bland Sutton's and Dr. Giles' "Diseases of Women." Prof. Krafft-Ebing's "Psychopathia Sexualis," translated from the last edition.

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

*An Address on Recent Medical Progress and Celtic Medicine, delivered in the Mater Misericordiæ Hospital, Dublin.** By THOMAS MORE MADDEN, M.D., F.R.C.S.E., M.A.O., (*Honoris Causâ*), Royal University of Ireland; Obstetric Physician and Gynæcologist to the Hospital, &c.

INTRODUCTION.

THE enduring influence of old usage on even the most progressive of professions is manifest on the present occasion. Thus in the earliest records of medicine we find that the neophytes' initiation into the temple of Æsculapius was accompanied by elaborate ceremonials, concluding with an exhortation or Address to the probationer, and the witnesses of his reception. Of those ancient rites one alone survives. The modern medical student is no longer crowned with garlands as his predecessors were on their entrance into the Grecian Fane. The vestal's song is no longer raised, nor are the libations now poured forth—at least in public—in his honour. Nevertheless from that remote period down to these closing days of the nineteenth century he has remained unemancipated from the penalties of the Introductory Address on the commencement of his course.

In accordance therefore with that time-honoured observance, I have, by the favour of my colleagues, been deputed on this inauguration of the Thirty-eighth Annual Session of the Mater Misericordiæ Hospital, to say a few words of welcome and counsel to our class and to those who are about to join our ranks. I am, moreover, charged by the Sisters of Mercy as well as by the Medical Board to express their thanks to each one of this distinguished assemblage of the friends and supporters of the institution for the honour conferred upon us by your presence to-day.

* An Inaugural Address delivered on the opening of the Thirty-eighth Annual Session of the Institution, on Monday, October 23, 1899.

GROWTH AND PRESENT POSITION OF THE MATER MISERICORDIÆ
HOSPITAL.

The fact that nearly twenty years have elapsed since I last delivered an Introductory Address in this place, recalls to my mind the alterations which within that period have occurred in the Mater Hospital, in the science therein cultivated and in the *personnel* of its staff.

With regard to the last-mentioned of these changes I may observe that although those who, like myself, have passed, "*Nel mezzo del cammin di nostra vita*," cannot but be thus reminded of how rapidly "the old order giveth way to the new," there nevertheless remains in all these mutations a revivifying assurance of the inherent stability and growth of this great institution. For if, since then, we have to deplore the loss of four of our esteemed colleagues—of whom none were more justly valued and deeply lamented than Dr. Boyd, over whose untimely grave we have recently mourned—and who now rest from their labours in the well-founded hope of that mercy promised to the merciful and to those who have faithfully ministered to the poor and suffering—their places have been filled by others so worthy of their office and of the fame of their predecessors, as those by whom the standard of the hospital is now upheld in the van of medical progress. And thus, unaffected by the fleeting shadows of its successive servitors, does our institution continue its two-fold mission of humanity and of science with a vitality developing with its maturity.

In the establishment of the Mater Hospital the Sisters of Mercy, by whom it was founded close on forty years ago, and by whom it has since been maintained, with little assistance beyond the inexhaustible benevolence of Irish charity, put before themselves a high ideal, the fruition of which you now see in this institution, which, in an independent official report, has been aptly described as "The Queen of Dublin Hospitals."

Of the work done here it may suffice to say that during the past year alone 3,522 patients have been treated within the wards; 23,061 cases were relieved in the extern departments; and 696 operations (not including gynæcological and eye operations) were performed in the theatre of the hospital. Nor is there any single form of disease or accident that may afflict mankind excluded from these portals, which, like unto that Divine Mercy of which this institution is the creation, are ever freely open to all who

are impelled by suffering and poverty to seek its succour, without distinction of creed, or race, or class.

Within the period covered by this Address the vital importance of thoroughly aseptic conditions in all that appertains to the care and treatment of the sick has become universally recognised. With this object, therefore, the Sisters of Mercy have incurred a large expenditure to enforce in accordance with the views of their medical staff the teaching of sanitation. Hence our operating theatres have been re-constructed, ventilation and drainage improved, and a very efficient and well-trained nursing staff provided for our public and private wards, as well as for the necessities of general practice throughout every part of the country wherein the services of the Mater nurses are in constant requisition.

Finally, it may be mentioned that the incalculable advantages of a new Convalescent Asylum in the most hygienic surroundings are about to be afforded to our patients on their discharge from hospital.

Whilst such consideration has been given to the primary purpose of the institution, those entrusted with its administration have in no wise been oblivious of its secondary and almost equally important function—viz., that of serving as a centre of clinical medical education and scientific teaching. Accordingly we have been here provided with one of the first, and probably the best equipped, pathological laboratories attached to an Irish hospital. This department, on the researches of which the present practice of medicine is so largely dependent, has been placed under the direction of an authority whose name is recognised wherever modern pathology and bacteriology are studied. In like manner the first adequate installation in Ireland of the apparatus necessary for that Röntgen Ray work, by which so many of the obscurities of medico-chirurgical practice are now elucidated, was here instituted. A similar desire to keep well abreast of the flowing tide of modern progress was shown in the establishment of the special office of anæsthetist, which has been well justified by the consequent immunity from risk afforded by the improved methods of anæsthesia employed here.

Lastly, amongst the changes effected in the hospital since my former Address, the increase in its resident staff is one of the most important. In no institution in this country has larger provision been made for those resident appointments so necessary for the work of a great hospital, and of such advantage to the future interests of junior members of the profession. Hence

we are now afforded the services of a resident staff consisting of two house physicians, four house surgeons, and eight clinical assistants, always available for the emergencies of the institution. These gentlemen, and their predecessors, have fully borne out their selection by the positions so many of them have subsequently attained, as well as by the work they have here accomplished. By similar men have the junior appointments in this hospital been filled throughout the many years of my connection with it, and by them has its reputation been maintained, and the influence of its clinical teaching been dispersed abroad and at home, *orbi et urbi*.

Thus in every clime, or place, or circumstance, when medical men have faced death to save the lives of others, from the fever-stricken districts of our own land to the malarial swamps of Africa, the plague-infested cities of the Far East, or the battle-fields of the Soudan, the Indian frontier, or of the Transvaal, there have the quondam students of the Mater Hospital been found discharging their mission of mercy to humanity.

INFLUENCE OF BACTERIOLOGICAL DISCOVERY ON THE PROGRESS OF CLINICAL MEDICINE.

Turning from the work of our hospital and its *alumni* to that of the healing art, of which it is the clinical theatre, we find here as elsewhere the most distinct imprint of recent progress in every department of practical medicine, surgery, and gynæcology, as well as in ophthalmology, dermatology, and the other special branches of modern medico-chirurgical science. The rapidity of this advance has been such that the highest professional accomplishments attainable twenty years ago have already become almost as obsolete for a student as the knowledge of Hippocrates in physic, or the skill of Ambrose Paré in surgery, might prove, could either be now tested by a modern Conjoint or Royal University Medical Examination.

So many and complex are the factors in that revolution in medicine that it would be useless to attempt any survey, however brief, over a field of such extent. Nevertheless, I may, perhaps, be permitted a passing allusion to one point, which, trite as it must be to every member of the profession, may possibly interest some of our junior friends present, as affording a master-key to many of the most signal triumphs of recent medical and surgical practice—I refer, namely, to the germ theory of disease. On that doctrine, moreover, largely rests the foundation of modern Preventive Medicine and

Sanitary Science, by which the limitation of disease, the prolongation of life, and the increment of the welfare of the community have been so signally accomplished within the past few years.

Recent, however, as has been the acceptance of the germ or bacterial theory, that dogma was originally promulgated more than two hundred years ago by Leeuwenhock, and was subsequently reiterated at intervals down to the middle of the present century by other writers. But those earlier teachings had apparently as little practical influence on older ideas as erstwhile had the voice of the inspired Precursor whose proclamations of far higher and more certain truths once fell unheeded in the Palestine wilderness.

Nor was it until long after the actuality of the facts established in our own time by Pasteur, Lister, and Koch had been demonstrated beyond controversy that this theory became universally adopted as the basis of a new pathology and therapeutics. And only since then has the medical practitioner been furnished by the bacteriologist with an accurate knowledge of the ætiology of many of the formerly obscurest forms of disease. Thus, for instance, we now know that diphtheria, septicæmia, cholera, tuberculosis, lupus, typhoid, as well as countless other maladies, including the malarial fevers of equatorial regions, and the bubonic plague which in former times wended its path of devastation from its remote habitat in the east, even to this sea-girt western land, and with a revisitation of which we are at present apparently threatened, are one and all distinctly traceable to bacterial virus, communicable, in each instance, by specifically infective micro-organisms. These pathogenic or disease-bearing microbes, to whatever class they belong, whether bacteria, bacilli, spirilla, streptococci, or however else named, possess certain common characteristics. Thus they present themselves as microscopically minute organisms capable of rapid and indefinite self-reproduction within the system to which they may gain access, and consisting essentially of a single cell by the distinctive form of which, in each case, their classification and attributes can be differentiated.

Such are the prolific seeds of disease with which the air we breathe, the water we drink, the food we consume, so teem that our existence would be impossible were it not for that constitutional conservative force which in former times was described as the *Vis medicatrix Naturæ*, and which, as we know, is manifest in the physiological defensive action of the leucocytes or

white corpuscles of the blood. These, by their power of ingesting, and rendering innocuous, such injurious particulate matter as may have gained access to the system, act as the garrison of the beleagured citadel of life, and so under normal circumstances repel the invading hosts of the pathogenic microbic enemies by which it is surrounded.

Legion, however, as is the number of our bacterial foes, a still larger proportion of microbes fulfil functions of vital importance and utility in the economy of nature. Such, for instance, are the micro-organisms by which the oxidisable and nitrogenous material of effete and decomposing organic matter is seized upon and resolved into its proximate elements. In this way, then, is restored to the Universe, for the maintenance of vegetable and animal existence, that indispensable stock of chemical constituents in default of which this fair world of ours, would in time inevitably become reduced to the lifeless desolation of its pale-faced satellite—

“See! all things with each other blending,
Each to all its being lending,
All on each in turn depending,
Floating, mingling, interweaving—
Rising, sinking, and receiving
Each from each, while each is giving
On to each, still upward tending,
And everywhere diffused is Harmony unending.”

It would be impossible in this Address to dwell on our further indebtedness to the bacteriological scientists who have not only added to our knowledge of the ætiology of diseases, but have, moreover, armed us with the newer weapons of sero-therapy and specific antitoxins now available for their treatment or prevention.

The same reason also precludes my present reference to the many other modern developments of practical medicine and therapeutics, which are so fully set forth in our Senior Physician's well-known “Hand-Book of Hospital Practice,” and which clinically are daily expounded in the medical wards of this hospital.

SURGICAL PROGRESS.

In the domain of Surgery the evidence of rapid advance since my former Address is yet more apparent than in that of Medicine, as may be exemplified by a moment's reference to the upgrowth and development of antiseptic surgical practice within that period. The fruits of this are, perhaps, most con-

spicuous in the successful operations now resorted to in countless cases—such, for instance, as tubercular peritonitis, renal, intestinal, gastric, and other diseases, and lesions within the peritoneal cavity—from any effective intervention with which our predecessors were almost necessarily debarred.

These procedures, with many others of equal importance that need not be here enumerated, which in my youth were either altogether undreamt of, or which, if occasionally attempted, were then associated with such fatality as to preclude their general performance, are now daily accomplished with smaller risk than might have attended the opening of a whitlow in pre-antiseptic days. Nor is it necessary to remind my auditors that this vast improvement in the practice of surgery is largely traceable to the example and teachings of Lord Lister, whose well-deserved elevation to the peerage can add but little to a fame that must endure as long as the art of surgery is cultivated. For although the original paraphernalia and doctrines of antisepticism have already become so modified and improved that many surgeons now aim at the annihilation of sepsis by absolute surgical cleanliness, to which all active germicidal agents are but essential adjuncts, nevertheless, for all this, we still remain primarily indebted to him whose name has been just mentioned as the pioneer of the non-septic surgery of the present time.

RECENT GYNÆCOLOGY.

In this connection I cannot altogether refrain from alluding to the branch of medicine with which I am most intimately concerned. But however tempted I may be to dilate on the progress of modern Gynæcology, I shall confine, within the narrowest possible limits, my reference to a subject that, however interesting to myself, would probably prove intolerably wearisome to the majority of my present audience.

It will, therefore, be enough to say here that this youngest of the tripart divisions of the healing art has exhibited a progressive development fully equal to that of either of its medico-surgical parent sciences, and that this specialism, the very name of which was unknown in my student days, has within the past few years advanced by leaps and bounds to its present prominence in the foreground of medical progress.

The diseases and abnormalities of what was formerly the *terra incognita Australis* of Pathology—viz., the region of the uterus and its appendages, have now become as accurately

differentiated and as successfully treated as those of any of the external structures of the body. Thus, for instance, fibromyomata and carcinoma of the uterus, the various displacements of that organ, the affections of the ovarian and tubal adnexa, with numberless other gynæcological disorders, the victims of which were formerly, in many instances, abandoned to lives of hopeless misery, have now been brought within the reach of accurate diagnosis, and generally successful treatment. So great has been the improvement, that in operations of such gravity as ovariectomy there is now practically no appreciable death-rate, whilst in other procedures—such as hysterectomy—the terrible fatality of one in three or four that existed within the last twenty years has now been reduced to less than one per cent. of such cases.

The limits of time available for this Address prevent any reference here to those other no less important subdivisions of our art, such as ophthalmology, dermatology, and pharmacology that are specially cultivated in this hospital.

THE FUTURE OF YOUNG MEDICAL MEN.

Before bringing to a close observations which have probably already proved sufficiently prolonged, I must, in imitation of the postscript to a lady's letter, in which the gist of the communication generally lies, add a few words especially addressed to the members of our class in whose behalf a lecture of this kind is primarily intended.

To you, gentlemen, I therefore venture to offer, as I did to your predecessors here "Twenty golden years ago," my sincere congratulations on your selection of the profession of Medicine. For although, since then, the requirements of the Examination Boards have been vastly increased in extent and stringency; although our calling has become now so overcrowded, in many places, that the struggle of early professional life must too frequently be waged under circumstances of keenest competition and ill-remunerated toil; and although, moreover, the disciples of the healing art, and more especially the ill-requited members of the Poor Law Medical Service, may not hope for positions of such emolument or of dignified repose as are reserved for the successful lawyer or the victorious soldier, or expect "To close in shades like these, a youth of labour with an age of ease;" nevertheless medicine still retains gifts and advantages above those of any other earthly profession. Assuredly our calling affords the largest opportunities that

man can enjoy for benevolence to humanity. Moreover, not merely does it arm us with the power of relieving suffering, prolonging life, restoring banished reason to its dominion over matter, and mitigating the pangs attendant on the departing spirit's separation from its frail tenement, but even from that more material point of view which may possibly be no less important to you than to myself, it also offers other compensations to its followers.

Unlike almost every other profession, Medicine is cosmopolitan, and wherever acquired may be practised in all climes and circumstances wherein man when stricken by disease or accident must of necessity still turn, as he did in the Homeric days of old, to "A wise physician, skilled his wounds to heal," for respite from suffering or from death.

Not until pain be annihilated, and death be swallowed up in the final victory of eternity over time, need any well-qualified practitioner of medicine who is blessed with the essential attributes of rectitude of conduct—kindness of heart, sympathy of demeanour, and energy of character—ever doubt his ability to secure, by the exercise of his profession, in any part of the world, a sufficient competency and an honourable position.

To that goal there are many paths now open. Thus, for instance, the young practitioner may select for his future career the medical departments of the Army or Navy, or those of the Civil Service, under its Poor Law Lunatic Asylums, or Prison Boards. Or should he prefer, as our Consulting Physician well put it in an Address delivered here many years ago, "to devote himself to the service of the public rather than to the public service," he may do so in private practice either at home or abroad, or may readily find occupation for a time as a surgeon in the service of the Mercantile Marine.

IMPORTANCE OF CLINICAL STUDY.

But wherever your future lot be cast, and whatever else may conduce to your prosperity, you should ever bear in mind that the foundations of such success must be laid on the solid rock-bed of Clinical Knowledge, to which all other branches of science, however essential, now included in the medical curriculum, are but accessory and subservient.

Time-worn as this text may be, its paramount importance cannot be too strongly impressed on those who are now our fellow-students in that vast field of clinical medicine, the full

exploration of which would be beyond the capacity of the longest and most laborious life, and which may therefore well engage your unremitting attention during the brief period of your student days. To utilise clinical study, however, even the most zealous attendance on hospital practice will avail little if you do not at the same time cultivate the art of noting down the history of the cases that there come before you. Such notes will prove an invaluable store of experience, and will also serve to further the habit of rapidly grasping the salient features of each case, and thus acquiring that *Mens medica* which is essential for every practitioner. With the view therefore of stimulating the development of this most important faculty, the Leonard prizes in medicine and surgery are here offered, and will, we trust, be the objects of a well-contested competition at the close of the ensuing Session.

Gentlemen, on entering the medical profession you must assume many responsibilities as well as gain some privileges. On you, therefore, it will devolve to support the reputation of your calling, by a conscientious zeal in the honourable discharge of your great mission to the poor and suffering. Moreover, it will be your duty to add your mite of experience and of knowledge to that cairn of medical science which has been brought up to its present height by the aggregation of the individually minute contribution of your predecessors, and so maintaining the great traditions of Irish medicine, to hand it down to your successors improved and perfected by your labours.

CELTIC MEDICINE, ITS HISTORY AND LESSONS.

In this connection I may for a moment refer to the too generally forgotten fact that Irish medical men can lay claim not only to the traditions they inherit from their more immediate predecessors, but also to a history deserving of larger consideration than is now commonly given to it. For, as I have elsewhere shown, the practitioners of the healing art in this country are, in truth, the legitimate heirs of the oldest professional culture of which there are in existence the records in the living language of any European nation. Let me, therefore, remind you that in distant ages when the lamp of medical knowledge was unkindled in most other countries, its light shone with comparative brilliancy in this remote *Ultima Thule*, as may be easily proved by incontrovertible historical evidence. Thus, for instance, there are still extant and accessible in the libraries of the Royal Irish Academy and Trinity College in this city, as well

as in other similar collections elsewhere, a vast body of ancient Gaelic MS. documents, in many of which the distinguished history and high character of early Irish medicine are well illustrated.

From these sources we find that from the oldest period of authentic history the classic literature of Greek and Roman medicine, as well as a still more ancient native leechcraft, was cultivated in our own country even in those far-off ages. Whilst at the same epoch therapeutics, materia medica, and anatomy were studied, and surgery, gynæcology, and obstetrics were practised in Ireland, where the hereditary followers of the healing art were then held in high honour. Nay, more, we have clear evidence, which I have elsewhere sufficiently adduced, to show that the marvels of modern hypnotism and the employment of anæsthetics, on which we plume ourselves as the most beneficent discovery of the present age, were, although in cruder forms, here anticipated by our remote predecessors.

Amongst the numerous collegiate centres of professional as well as of ecclesiastical learning with which this *Insula Sanctorum et Doctorum* was studded over between the sixth and sixteenth centuries, and the very ruins of many of which, such as Clonmacnois, Cashel, Meelick, Portumna, Lismore, and Monasterboice, still attest the culture and art as well as the piety of their founders, one, at least, is of special interest to us as of a distinctly medical origin—viz., *Tuam Breacain*, near the present town of Belturbet. This college, as Dr. Healy, Bishop of Clonfert, has shown, was established by a medical practitioner of no little eminence, Saint Bricin, whose surgical skill, more especially in cerebral surgery, is celebrated in our oldest annals.

All the various faculties of these Celtic Catholic Universities, for such was the character of many of them, were for long ages crowded with students from every part of Europe, who in some of them were subjected to a course extending over a period far more protracted than even that of the modern medical student. From these institutions also were sent forth men such as Alcuin, the founder of the University of Pisa, Johannes Scotus, Erigena, who in the ninth century was regarded as the ablest writer of that age as well as the first professor of philosophy in Paris, and countless others, to diffuse the lights of learning and science as well as of faith to the ends of the earth.

Nor did that long intellectual pre-eminence cease in medicine, at least until some little time after the ruthless destruction of

the Irish Monastic Universities during the reigns of Henry VIII. and Elizabeth, and even down to the middle part of the seventeenth century we find the far-extending fame of Irish medicine referred to by authorities of such eminence as Van Helmont.

To the destruction of those Celtic Universities may, moreover, be attributed the origin of the disabilities in the matter of higher education that for three centuries have pressed, and still press, heavily on the majority of the Irish people, and on none more forcibly than on those of them belonging, as so many here do, to the medical profession.

The latter, during all these generations, have been thus unfairly handicapped in the race of existence by the impossibility of securing, in accordance with their conscientious convictions, that full measure of academic training within the halls of a university which is so conducive to success in the higher walks of professional life or public employment, and which is accessible to their compeers of every other persuasion.

We may, however, rest well assured that in this, as in all other matters, justice, although long delayed, must, like that truth on which it is founded, eventually prevail. And therefore can we confidently anticipate that this last vestige of the dark shadows cast o'er our land by the successful intolerance of a by-gone age may for ever be swept away in the near day-dawn of the Twentieth Century, which we trust will usher in the final and equitable adjustment of the Irish University Question.

Whether in our day this long-cherished hope be realised or not, will, however, we are equally confident, in no wise affect your kindly relations and zealous co-operation in the mission of medicine with your brother practitioners of all other schools and denominations. Nor need we attempt to stimulate your esteem and respect for men amongst whose professional ancestors were included names such as those of Cusack, Carmichael, Graves, or Stokes, which at home and abroad are as imperishably engraved on the annals of our science as those of their Catholic compeers—Corrigan, O'Reilly, Lyons, or Hayden; or who, like the Anglican founder of Sir Patrick Dun's Hospital, or Bartholomew Moss, to whom Ireland owes her great school of midwifery, the Rotunda; or Dr. Richard Steevens, by whom the hospital which bears his name was established—have left in our city enduring monuments of a medical benevolence as far above all sectarian considerations as that of the founders of the four Catholic hospitals which are so largely supported by Irish charity in Dublin.

In conclusion, I would only venture to express my trust that in the fulness of years, you, gentlemen, may one and all leave behind you such imprints on the sands of time as those I have just named did. Thus will you not only honour yourselves and your calling, but also perchance reflect some of your well-won credit on your clinical *Alma Mater* and on those who were once your teachers in the Mater Misericordiae Hospital.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF
PHILADELPHIA.

THE College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1900, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the secretary of the college, Thomas R. Neilson, M.D., on or before May 1, 1900. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; other essays will be returned upon application within three months after the award. The Alvarenga Prize for 1899 has been awarded to Dr. Robert L. Randolph, of Baltimore, Md., for his essay entitled—"The Regeneration of the Crystalline Lens. An experimental study."

STAB WOUND OF THE THORACIC DUCT.

W. H. LYNE, M.D. (*Maryland Med. Jour.*, September 10, 1898), reports the above condition in a negro aged 24. An oblique stab wound about one inch long, depth unknown, was found above and behind the left clavicle and parallel with the outer border of the sterno-cleido-mastoid near its attachment. A longitudinal wound of the thoracic duct was therefore possible. An abundant fluid milky was steadily escaping. The wound was cleansed, packed with gauze, and bandaged. On removing the dressing about seven hours afterwards, the escape of chyle had completely stopped, and the dressing was reapplied. Recovery was prompt, except for a slight suppuration.

CLINICAL RECORDS.

Six Cases of Alcoholism treated successfully by Inhibition of Alcohol, by Massage and Bromides. By JAMES R. WALLACE, M.D., F.R.C.S.I., Surgeon to the Home Hospital, Calcutta.

I HAVE for many years in practice treated numerous cases of alcoholism by absolute stoppage of alcohol, by a regular system of massage and by the administration of potassium bromide with cinchona and capsicum. By alcoholism I mean the frequent imbibition of whisky, brandy, beer or champagne for days and weeks together, resulting in a complete vitiation of digestion, insomnia, mental and nervous irritability and prostration, and often delirium tremens. I employ the method of treatment I now advocate, namely, absolute rest in bed, massage, inhibition of alcohol and the use of bromide, cinchona and capsicum on the following principles. Rest in bed exercises a distinctively calmative influence upon the brain and nervous system, massage as a form of passive exercise not only regulates the circulation and tones the muscular system, but has a marked moral influence in pacifying the "turbulence" of the central nervous organism. It also has a peculiarly calmative somnolent action. I believe that in all cases alcohol acts as a narcotic poison, and that the immediate withdrawal of the poison or its absolute stoppage is an essential factor to the cutting short of the deleteriousness of the cumulative poison and to a rapid recovery from its effects. I do not believe that in such cases the use of alcohol should be *gradually* withdrawn, nor do I believe that the administration of the smallest doses of this narcotic during the course of illness arising therefrom does anything else but positive harm. In the three drugs I have mentioned we have a valuable combination of an effective nerve and brain sedative in bromide, a good digestive and alterative in cinchona, and a splendid restorative stimulant in capsicum. This routine treatment was adopted in each of the following cases:—

CASE I. (No. 4 in Hospital Case Book).—Miss —, an English woman, 25 years of age, was admitted into the Home Hospital on the 26th of November, 1898, suffering from insomnia, great mental excitement, persistent vomiting, diarrhoea and nervous prostration. She had been drinking hard for almost six weeks, and indulged in

a mixture of beverages—whisky, beer, champagne and liqueurs. Four large bottles of beer, three pints of champagne, five or six glasses of whisky and four or five glasses of liqueur formed the ordinary total of a day's drink. She had not slept for several nights, could not retain any food (though she retained the stimulants), her bowels were much relaxed, her tongue was coated with a thick yellowish-brown fur, her hands were very tremulous, and she was quite excited, nervous and hysterical. On examination, no organic disorder of any kind was discovered. She was put to bed and massaged from head to foot for half-an-hour. She was given iced gruel, an ounce at a time every hour. The mixture, containing bromide, capsicum and cinchona, was given every three hours. All alcohol was stopped. Within twenty-four hours the diarrhoea and vomiting ceased. Massage, which was done every four hours, helped by the mixture, procured sleep in sixteen hours. On the following day solid food was allowed, and the treatment continued. After the fourth day the patient slept naturally for several hours at a time, all the nervous symptoms had subsided, and her digestion seemed quite restored. She was discharged cured on the 3rd of December—eight days after admission.

CASE II. (No. 14 in Hospital Case Book).—Mr. —, a European, aged 50, an old beer drinker, corpulent and in good general health, had been on the "burst" for almost three weeks. He had been drinking as many as 25 large bottles of beer daily with a couple of pints of champagne thrown in by way of a change, and he had drunk this allowance with a trifling difference for three weeks. He was brought into the Home Hospital on the 6th of January with threatened delirium tremens. All liquor stopped, massage every three hours for 20 minutes at a time. Same mixture as above, milk diet. Within 24 hours the excessive nervous irritability and mental illusions ceased, and he slept for three hours. Within 48 hours his condition was perfectly normal, and he was allowed to leave the hospital on the evening of the 8th, as he desired to do so.

CASE III. (No. 22 in Hospital Case Book).—Mr. —, a Scotchman, aged 30, general health good, had been drinking heavily for a week, imbibing a mixture of whisky, beer and gin. Excessive vomiting, diarrhoea, sleeplessness and very marked tremulous excitement. Same treatment as above, nothing given especially for vomiting or diarrhoea, which both subsided without

treatment. He was discharged in 48 hours, in a normal condition.

CASE IV. (No. 50 in Hospital Case Book).—Mrs. —, an English lady, aged 50, the mother of several grown-up children, was brought into the Home Hospital by her friends on the 9th of May. She was much emaciated and was suffering chiefly from melancholia and insomnia with occasional illusions. She had been drinking wines of all sorts and beer in large quantities for nearly three weeks. During the three days before her admission her friends had managed to prevent her having her usual drinks, but she resorted to eau-de-Cologne and methylated spirits, drinking about a quart of each every day. The melancholia had appeared since she resorted to the spurious drinks. She was treated on the above lines, and within 48 hours she slept well, and was cured within five days, being discharged on the 14th of May.

CASE V. (No. 53 in Hospital Case Book).—Mr. —, an Englishman, aged 30, in the best of health organically, was admitted into the Home Hospital on the 14th of May with delirium tremens. There was no accommodation for him in the special department, so he was placed in the surgical room on the third floor. He had been drinking very heavily for six weeks and imbibed two squares of gin each day. His friends, who brought him to the hospital, stated that he had twice tried to commit suicide by jumping over-board the steamer that brought him to Calcutta. He was placed in charge of a special nurse, with two strong male attendants to keep watch over him. An hour after admission he became exceedingly boisterous, and was terrified by the ugliest possible spectres and illusions. He rushed frantically out of his room and was about to throw himself over the balustrade of the terrace, but he was quickly chased and prevented. A dose of bromide, cinchona and capsicum mixture was given him, and he was coaxed to his bed, when he was steadily massaged for an hour, after which he took a cupful of milk gruel. Two hours later a second dose of mixture was administered and he was again massaged. He slept for half-an-hour, when he woke up suddenly as though stricken with terror, rushed out of the room, and made a second attempt to throw himself over the terrace. His attendants soon had him in hand, and he was brought to bed and the doors of his room were then closely barred. The mixture was given every four hours; he was fed with milk gruel every two hours; he was massaged every four hours. He

was wakeful and excited about all sorts of imaginary objects which kept him from sleeping till 3 a.m. He then dozed off, and did not wake till 8 o'clock. This condition of mental and nervous excitement and timidity lasted for three days, gradually lessening each day, but after the first day he had spells of sleep for two or three hours, with a similar period of wakefulness. The effect of the treatment, especially the massage, was most remarkable in this case. It seemed to have a marvellous influence in allaying mental fear, and it seemed as though the effect was chiefly of a moral character, because as long as it lasted the patient appeared to feel that he was protected, and that he was safe from the imaginary enemies that tortured him in so real a fashion. The patient was eight days in hospital, and was discharged on the 20th of May, though he was really well enough to be left alone on the fifth day after his admission.

CASE VI. (No. 69 in Hospital Case Book).—A young unmarried Irish lady, aged 25, was admitted into the Home Hospital on the 23rd July for delirium tremens. She was otherwise in good robust health. She had been drinking for nearly two months, indulging chiefly in champagne and liqueurs. She had not slept for four days. She was in a state of wild horror from the presence of spectres. Bromide, cinchona and capsicum mixture was given her every two hours. She took her nourishment (milk gruel and soup) fairly well, and permitted massage to be performed regularly every three hours. It was remarkable how calm and uninfluenced by fear she was during the process of massage, but became terrified immediately it was stopped. For twenty-four hours she did not sleep, but after that she dozed for an hour or two at a time. The second, third and fourth days of treatment found her better each day, and on the fifth day all cerebral and nervous excitability had subsided.

Remarks.—These cases form a fairly instructive series with varied symptoms, identified with the definite stages of alcoholism. All were treated alike, except in the matter of lessening the interval of dosage, both of medicine and massage, to cope with the intensity of the alcoholic manifestations. I believe they sufficiently illustrate a plan of treatment that may be relied upon as promising fairly uniform successful results. I look upon the administration of massage in such cases as a very powerful adjuvant in the therapeutics of alcoholism, largely on account of

its moral effect on the tremulous and unstable condition of the central organism.

Old Standing Middle Ear Disease, giving rise to Cerebral Symptoms.

Operation on Mastoid Cells: Relief. By JAMES R. WALLACE, M.D., F.R.C.S.I.; Surgeon to the Home Hospital, Calcutta.

S. S., an Anglo-Indian, aged 22, married, had suffered from auricular trouble from infancy, the sequel of measles. Beyond a continuous discharge of muco-purulent matter from the left ear, more copious at times than at others, there were no symptoms to cause distress or anxiety till about a year before admission into the Home Hospital. I was then consulted about certain cerebral symptoms, such as sudden giddiness, with transient staggering gait, attended by nausea and headache, and distinct pain located in the left mastoid region. Buzzing and whirling sounds were also complained of on the affected side. The first of these unpleasant manifestations occurred after a bath in the river, when a good deal of diving and swimming were done. With free purgation, the administration of small doses of iodide of potassium and cinchona, and the inunction of biniodide of mercury with belladonna behind the ear and over the mastoid cells, and by packing of the auditory canal with iodoformised cotton, the symptoms rapidly subsided. Two or three months later there was a repetition of the attack, and it was relieved by similar means. About three months before admission into the hospital these attacks became more frequent and more severe, and I suggested the operation of opening the mastoid cells. About this time the discharge from the ear became distinctly offensive and sanguino-purulent. The general health was good, and this was indicated by the patient's appearance. About the middle of November there was a very marked aggravation of the cerebral symptoms, the pain in the mastoid region became severe and was attended with a sense of throbbing. There was marked hemicrania, nausea, faintness and a good deal of facial pallor. I advised a consultation with Colonel R. Havelock Charles, I.M.S., and Dr. Caddy, and as a result the operation was decided upon. The patient was admitted into the Home Hospital on 20th of November, 1898, and after a day's rest in bed he was subjected to the operation on the 21st of November. He was chloroformed by Dr. Feldstein, while Doctors Coulter and Caddy assisted me at the operation. I made a

two inch semilunar incision parallel with the free border of the auricle, commencing above and terminating near the apex of the mastoid process. I dissected the flap after cutting through the periosteum, and carefully peeling it off the bone. I removed the outer osseous table with hammer and chisel. Having done so, the gouge was used, till the whole of the cancellous tissue of the mastoid cells was removed, and the internal auditory meatus reached. The cancellous tissue was a good deal necrosed, but the bony structure adjoining the meatus was extremely hard and eburnated, so that gouging became very difficult indeed. The air-cells were not seen in the position where they are usually met with. Having created a free channel of communication from the mastoid to the external ear, the wound, after thorough cleaning, was accurately sutured with horse hair. The patient bore chlorform well, and the operation afforded complete relief to all the distressing head symptoms. He slept well, took his nourishment nicely, and the wound healed by first intention in about a week. The subsequent progress of the case was satisfactory, and though the patient left the hospital on the 9th of December and was doing well for some days after, while I attended him at his home, he was finally placed under Dr. Caddy's care.

The points of interest in this case are, its association with measles in infancy, the grave and sudden risk brought on by a septic condition of the discharge, and the immediately beneficial results of the operation.

Hereditary Syphilis in an Infant resembling Cretinism, cured by Mercury. By JAMES R. WALLACE, M.D., F.R.C.S.I., Surgeon to the Home Hospital, Calcutta.

J. T., an Anglo-Indian male child, aged 6 months, well nourished, being nourished by the mother, was admitted into the Home Hospital on the 9th of November, 1898, suffering with characteristic symptoms of inherited syphilis. There were condylomata about the anus, scrotum, and angles of the mouth, and all the general appearances of cretinism. There was a vacant, imbecile appearance about the face, the eyes were large and bulging, the forehead bulged prominently, the fontanelles were large and gaping, and the whole head had the appearance of being hydrocephalic. The hands, up to an inch beyond the wrists, were swollen, not by œdema, but by what was undoubtedly periosteal thickening of

the phalanges, carpus and metacarpus. No other part of the bony system was similarly affected. The child's organs were apparently healthy. For a fortnight previous to going into the hospital, the child had had "fits," and it was for the treatment of these fits that the mother consulted me. They had occurred daily and some times twice daily, from the date of their first appearance. Within an hour of its admission into hospital the child was attacked with one of these paroxysms. It uttered a peculiar cry of pain, the face was fear-stricken in appearance, a distinct but short convulsion followed, in which the upper and lower limbs were equally involved; there were facial twitchings and distortions, followed by utter prostration for about fifteen minutes, with complete unconsciousness. I watched the fit from beginning to end, and came to the conclusion that it was due to the presence of fluid in the ventricles of the brain, dependent upon a tubercular or syphilitic taint. The mother bore evident signs of syphilitic infection, in the form of psoriatic onychia. I have seen but two cases of cretinism in Calcutta, where I have now practised for over 20 years. Both were the children of English parents in good circumstances. Both cases were treated as suspicious of hereditary syphilitic contamination, and mercurials were given internally and externally with good effect. One case occurred about ten years ago, and the little boy referred to is now living and fairly well, though he is a weak sample of humanity. The second case occurred about six years ago. In addition to mercurials, he was given small doses of thyroid extract. He completely recovered, but died about a year ago from cholera. The present case so closely resembled the two just quoted, that I would be inclined to describe it as an instance of cretinism associated with congenital syphilis. In the present case calomel in $\frac{1}{2}$ grain doses was given once daily and mercurial ointment with lanolin, in the proportion of 1 to 7, was rubbed freely over the whole caput and into the affected hands and forearms. A mixture containing one grain of iodide and two of bromide of potassium in sweetened cod liver oil was given twice daily. The mother's nourishment was disallowed. There was no difficulty in weaning the infant, and it seemed to thrive better on milk and gruel. A fit occurred each day for three days, and then there were no more. The child was detained in hospital for eleven days. Its appearance had much improved, especially in the matter of looking more intelligent. The head had visibly diminished in size. The bowels, which had been constipated for two months, had now become quite regular, and the child was

taking its food well and sleeping well. For a month later I saw the child weekly. The treatment as above described was continued with remarkable efficacy. Up to the present time, after a period of ten months, the child seems practically quite well.

I do not of course attempt to confuse hereditary syphilis with cretinism, but I record this case as peculiar in the matter of the interassociation of cretinism with congenital syphilis, especially as I have come across two other cases of a similar type, and therefore the experience is instructive.

MEDICAL BOOK-KEEPING WITHOUT BOOKS.

DR. THOMAS NELSON describes (*Birmingham Medical Review*, September, 1899) a method of keeping medical accounts by means of the card system. The cards serve as a visiting list, a record of home work, and a ledger. They are distinguished by colour, and are arranged in compartments numbered according to the days of the month for "live" cards (i.e. those referring to cases under treatment), afterwards they are passed into an alphabetical series which can be easily referred to for sending out accounts or marking their payment. Paid off accounts move to another case, so the three series represent "live" cards, account owing cards, and paid cards. Brief notes can be entered on the cards, so that in their last stage they also form case cards.

PNEUMOTHORAX FROM GAS-PRODUCING BACTERIA.

DR. F. G. FINLEY reports (*Montreal Medical Journal*, Oct., 1899) a case of pneumothorax, due to gas production by the *Bacillus coli*. The production of gas followed the rupture of a sub-diaphragmatic abscess into the pleura.

THE TREATMENT OF ASTHMA.

VON NOORDEN (*Münchener med. Wochenschrift*, September 27, 1898) recommends atropin, which was introduced by Trousseau. Beginning with $\frac{1}{320}$ grain of atropin, the dose is increased to $\frac{1}{8}$ grain after two or three days. After the maximum of $\frac{1}{8}$ grain is reached, the dose is gradually reduced, the whole course lasting four to six weeks. Constant medical supervision is necessary, but no effect is observed, if the drug is given in this way. Though atropin does not influence the severity of the attacks, it lengthens the intervals between them very considerably, and, though it may not cure, causes lasting improvement, unless the case is complicated by emphysema or chronic bronchitis.

31, GOLD & PRIZE MEDALS AWARDED.

MANY of the non-intoxicating beverages introduced as substitutes for alcoholic drinks tend, either in form or flavour, to directly frustrate the cause they professedly serve. The cups which cheer but do not inebriate are not so common, but when a really palatable and wholesome drink of the kind is found, it should meet with all the encouragement temperance advocates can accord. This, at least, would appear to be the view of Mr. S. C. HALL, the venerable apostle of total abstinence. In a late number of *Social Notes* he says:—"I have looked about for something to drink, and I think I have found it—pleasant, palatable, healthful. I refer to the Ginger Ale manufactured by Cantrell & Cochrane (of Dublin and Belfast). I know of no drink so delicious, and I believe it to be as healthful as it is agreeable." This is praise from the Sir Hubert Stanley of temperance, and where he leads, the public may safely follow.—*Court Circular*.

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SECTION OF STATE MEDICINE.

President—H. C. TWEEDY, M.D.

Sectional Secretary—NINIAN FALKINER, M.B.

Friday, April 28, 1899.

The PRESIDENT in the Chair.

Room Disinfection, with Special Reference to the use of Formic Aldehyde.

By DRs. LITTLEDALE and KIRKPATRICK.

[These communications will be found at pages 414 and 420 respectively of the number of the Journal for June, 1899, Vol. CVII.]

DR. NINIAN FALKINER, reviewing the action of chemical disinfectants, said they acted in three ways—by “oxidation, direct or indirect,” “reduction,” or by “coagulation of albumen.” Referring to the manner in which the disinfecting action of the formalin vapour stops at a clearly defined line in the culture tube, it suggests that the limit was caused by a chemical change in the vapour itself, produced by its action as a chemical oxidiser, it being reduced to the condition of an alcohol.

DR. KNOTT was inclined to believe that the stoppage of penetration at a certain line in the culture tube was due to eddying currents generated by the disinfectant, and that the explanation was physical rather than chemical.

DR. H. C. TWEEDY said that anyone working much among the poor knew the great objection they had to disinfection as carried out at present; a more effective and less disagreeable process was, therefore, much to be desired.

DR. LITTLEDALE, replying, said the penetrating action of the vapour appeared to be inversely proportional to the vitality of the bacteria—a point which seemed to favour the suggestion made by Dr. Ninian Falkiner. Their experiments had not given formalin an exhaustive trial, as they had used a very weak gas.

DR. KIRKPATRICK pointed out that amongst the advantages which formalin had over other gaseous disinfectants was the ease and rapidity with which it could be used. The result did not depend so much on the length of time objects were exposed to the gas, but rather on its initial force. Six or seven hours would be sufficient to thoroughly disinfect with this vapour, and on opening the doors and windows after this the smell at once disappeared, which was not the case with sulphurous acid or other gaseous disinfectants.

Cancer in Ireland.

DR. MARTLEY read a paper on cancer in Ireland. After contrasting the deaths from cancer in Ireland and England—the former rate being roughly only 70 per cent. of the latter—he illustrated by maps its very unequal incidence in different localities, the parts most affected being the east of Ulster, Dublin, and Carlow. In conclusion he moved a resolution that the Academy should appoint a committee to investigate the distribution of the disease in Ireland.

DR. T. W. GRIMSHAW, C.B., Registrar-General, in seconding the resolution, remarked that the maps which were before them showed that cancer was prevalent in the most anglicised parts of the country; for example they might look at Carlow, which they knew to be an old English colony, and Dublin, containing a large proportion of the population of English descent. Registration was not as long in vogue in Ireland as in England, and consequently the returns were less reliable, as they had often to trust to memory for the ages of middle-aged people. Dr. Haviland had noted the fact that cancer prevailed where there were sluggish rivers of considerable size and liable to overflow their banks, but they were ignorant as to the exact bearing this fact had on the occurrence of the disease.

DR. JOHN W. MOORE, President R.C.P.I., explained the preponderance of cases in Dublin and Belfast by the fact that in country districts the doctors were often reluctant to give cancer as a cause of death, owing to the existing dread of the disease, on account of its hereditary nature; also the diagnosis of cancer was usually verified in the city hospitals by a necropsy, which was not the case in the country; in addition Dublin and Belfast received cancer patients from all parts of the country.

DR. KNOTT also spoke.

The resolution was adopted by the meeting.

The Section then adjourned.

SECTION OF OBSTETRICS.

President—F. W. KIDD, M.D.

Sectional Secretary—JOHN H. GLENN, M.D.

Friday, May 26th, 1899.

The PRESIDENT in the Chair.

Specimens.

DR. A. SMITH showed myomatous uterus showing large abscess cavity removed by panhysterectomy. This specimen was removed from a woman aged forty, five years married, during which she had given birth to two stillborn children and an instrumentally-delivered full term child last December. The tumour was then a little larger than a four months pregnant uterus, and had since then grown rapidly, so that in the April of this year it filled up the entire abdomen. It was diagnosticated as a fibro-myoma of a cystic nature. He (Dr. Smith) attempted to do the operation of primary ligation of both the ovarian and uterine arteries, and found no difficulty in ligating the ovarian artery, but could not do so in the case of the uterine artery, owing to the weight of the tumour ($2\frac{1}{2}$ stone) fatiguing his assistant. He, therefore, decided to split the peritoneum in front high up, and to separate the bladder with a sponge. The bladder was so soft that in doing this he perforated it. He then discovered that the common iliac artery seemed to take the place of the uterine artery, and on separating it there was some hæmorrhage, which was checked by compression of the aorta. He amputated the uterus, and, while removing the tumour, damaged the ureter, which he clamped temporarily. The bladder was afterwards stitched with fine interrupted silk sutures, and the ureter treated in the same manner, the peritoneum being finally stitched over it. A large clot of blood which had collected in the bladder was washed out with a Bozeman's catheter, and the patient made a good recovery. The cystic contents of the tumour were found to be an abscess, which had started from the last confinement, the woman having then had septic troubles.

The PRESIDENT (Dr. F. W. Kidd) observed that complete recovery after one of the most dangerous complications—namely, injury to the bladder and ureter, with hæmorrhage—was gratifying.

DR. PUREFOX asked if there was any marked alteration in the size of the tumour during the few weeks succeeding the confinement.

DR. SMITH, in replying, said the patient a few years ago had been in a Dublin hospital, where a diagnosis was made by making an abdominal incision, but they did not operate, the patient then becoming pregnant again. So rapidly did the tumour grow that it gave the impression of an ovarian tumour.

Tuberculous Ovary removed by Abdominal Section.

DR. SMYLY showed a specimen of tubercle of the ovary, also a microscopic section of the same. Until quite recently such a condition was unknown, but Martin, in his recent work on diseases of the ovaries, states that 184 cases have been recorded in recent years, so that the disease is not so rare as had been supposed. As a primary affection, however, it is extremely rare, three cases only having been recorded by Edmonds, Jacobs, and v. Franke, but even these are doubtful. The patient was aged twenty-eight, and had been married two years. She enjoyed good health until shortly before marriage, when she had influenza, from which, however, she completely recovered. About Christmas, 1897, she began to feel ill, and had gradually got worse. I first saw her in April, 1899. She complained of always feeling tired, and seldom left her bed before mid-day, had profuse night sweats, and had steadily lost weight—18 lbs. in the last twelve months. She was greatly emaciated, had the appearance of a person in advanced phthisis, and had not menstruated for seven months. She had no cough, nor any physical signs of pulmonary disease. The abdomen was somewhat distended, and a small tumour could be detected in the left inguinal region, which, upon bimanual examination, proved to be the uterine adnexa of that side. The uterus and right appendages appeared to be normal.

Diagnosis.—Tubercular disease of left uterine adnexa, probably the tube, and tubercular peritonitis.

Operation.—On opening the abdomen no general tubercular disease was found. There were, however, dense pelvic adhesions, but no visible tubercles. Both tubes were found diseased, the right being about as thick as an ordinary pencil; the left, somewhat larger, lying upon an ill-defined mass about the size of an orange. When freeing the right tube it burst, and some pus escaped, but it was removed, with the accompanying ovary, without difficulty. The tumour on the left side had developed in the meso-rectum, which was intimately connected with it, passing over it from left to right, and then down behind it. The peritoneum was opened in front of the rectum, and about a quarter of an inch

from it, but in attempting to detach the latter, though the greatest care and gentleness were used, the finger penetrated the gut. Keeping the finger ends in contact with the tumour, it was enucleated without difficulty, brought up out of the pelvis, and removed with the tube in the ordinary manner. Upon examining the cavity left, however, it was discovered that the entire anterior wall of the rectum was wanting as far down as the reflexion of the peritoneum. After consultation with Dr. Gordon, who assisted at the operation, it was decided that an ordinary enterorrhaphy offered small prospect of success, not only because of the extent of the injury, but also because of the condition of the surrounding structures. It was, therefore, determined to resect the injured portion of bowel, and about two inches having been removed, two ligatures were inserted, one on either side of the lower end of the upper portion of the bowel, and by means of these it was drawn down into the lower portion, and secured there by a double row of sutures. Having sponged out the pelvic cavity, and packed the sutured portion around with iodoform gauze, the ends were brought out at the lower angle of the abdominal incision, the rest of which was closed in the usual manner.

The patient suffered severely from shock, but improved somewhat towards evening. Next day, however, she was not so well; the pulse was very rapid and weak, and the surface bedewed with cold, clammy sweat. During the night vomiting set in, with violent abdominal pains, and Dr. Smyly was summoned to her early in the morning. She had then violent abdominal pains, with evident peristaltic movements of the intestines, but no flatus had escaped. There was constant vomiting, no radial pulse could be felt, and her arms were cold up to the elbows. An endeavour to reach the constrictor per anum failed. Dr. Gordon saw her in consultation at 9 a.m., but as the wound presented an unhealthy appearance, and could not be used to form an artificial anus, and as it was evident that to have opened the abdomen in another position it would have proved immediately fatal, it was decided that nothing further could be attempted. During the day she gradually became worse, and the vomit assumed a fæcal character. Shortly after midnight, however, she took a turn for the better, passed flatus, and shortly after a fæcal motion; pains and vomiting ceased, and she took and retained nourishment. Since then she has steadily improved, takes her food well, and is putting on flesh. A considerable but steadily decreasing quantity of fæces, however, escapes from the abdominal wound. The specimen under the microscope shows giant cells and caseation.

DR. KIDD exhibited a small ovarian papillomatous cyst, with the following interesting history:—Patient, T. C., unmarried, aged thirty-five, was admitted to the Coombe Hospital on the 5th of May. She had been treated about a fortnight previously in the country for obstruction of the bowels and peritonitis; this had yielded to treatment. After arrival she was examined, and a small ovarian tumour diagnosed. Operation on the 13th. Tumour was adherent to everything—omentum, peritoneum, and intestines, but the adhesions were comparatively recent, and could be separated with a little care. Part of cyst wall looked gangrenous, and when the adhesions were all separated it was found that there was a twist on the pedicle; it required two half turns to put the tumour in its proper place. Patient made a very rapid recovery. Temperature only on one occasion touched 99° F., and stitches were removed on the eighth day. Union was perfect.

Myomatous Uterus removed by Abdominal Hysterectomy—Doyen's Method.

DR. SMYLY said this was the first time he had resorted to this method of operation, which, he believed, had never before been attempted in this country. The operation was performed for pain, and on opening the abdomen he found adhesions to the omentum and small intestines, in separating which there were a large number of bleeding points to control. This portion of the operation occupied three quarters of an hour. Doyen's part, which took seven minutes, commenced with pulling the tumour out of the abdomen over the pubes. He then opened the posterior *cul-de-sac*, reached hold of the cervix with a vulsellum forceps, and decorticated it with his finger, afterwards reflecting the peritoneum from the uterus, and finishing the operation in the ordinary way. He had no hesitation in saying this was by far the best method. Besides rapidity it had other advantages, for in the older method they cut the arteries where they are largest, thereby running the risk of death from embolism or hæmorrhage. As a matter of fact he did not see a big vessel at all during the operation.

The PRESIDENT said he had seen the cinematographic representation of the operation in Edinburgh, and he was amazed at the celerity with which an operation of such magnitude could be performed.

DR. TWEEDY asked if the operation were applicable to every form of myomatous uterus. Was it applicable where the myoma grows behind or in intra-ligamentous tumours?

DR. SMYLY, in reply, said that Doyen specially recommended this operation because he believed it to be applicable to all cases.

Polycystic Ovarian Tumour.

DR. KINKEAD read a paper on the above disease.

DR. SMYLY expressed surprise that tapping should have been resorted to by those having charge of the case before Dr. Kinkead. He was of opinion that any medical man who tapped an ovarian cyst should be liable to prosecution for malpractice. The Spencer Wells trocar was one of those instruments which were quite useless, and it was impossible to keep it aseptic. The muscular coat which covered the front of the tumour, he thought, might have been the broad ligament.

DR. KNOTT related the case of a young woman suffering from a rapidly growing tumour. She was tapped, as they were very chary of performing ovariectomy in those days. The patient died finally of slow suffocation, and the necropsy, at which he was present, revealed a polycystic ovarian tumour extending up into the thorax.

DR. F. W. KIDD said he was called into consultation in a case of a very large ovarian cyst, and to relieve dyspnoea and to benefit the puerperium, the patient having been recently delivered, he advocated tapping, cautioning, however, the medical man in attendance that this was only a palliative measure. Over 30 pints of fluid characteristic of an ovarian cyst were withdrawn. He was able to state that the cyst did not fill again, and that the patient had completely recovered.

Notes on a Successful Case of Cæsarean Section.

DR. F. W. KIDD (President) read notes on this subject. The case presented many points of interest. It was not done for contracted pelvis, but for a large growth which sprang from the posterior portion of the cervix. When seen at first this tumour was drawn up to such an extent that at first it seemed possible to push up the cervix; however, this method proved quite ineffectual. Patient was aged thirty-two, and was a primipara; was visited at her house on the 3rd December. Tumour was then diagnosed, and patient brought into hospital. A thorough examination was made, and as the patient had had labour pains it was determined to operate at 1 a.m. on the morning of Sunday, the 4th December. Every antiseptic precaution was taken, and on Dr. Stevens devolved the duty of attending to the child when born. I was assisted by Drs. Heuston, Cole-Baker, and Scully. Incision was

about 2 inches above and 4 below umbilicus, placenta, which was huge (11 inches by 7), was on anterior wall of uterus, and to right, and directly under incision in wall of uterus, so that it had to be dissected off towards left side for an inch or two. Then there was difficulty in getting lower extremities of child. Finally one was extracted before the other, with the result that the incision in uterine wall was ruptured at top end for a further two inches in an oblique direction. Membranes were unruptured at time of operation. The uterus did not immediately contract, and the bleeding was very considerable. Uterus was sutured with deep, strong silk sutures, going down to but not involving mucous membrane, with alternate superficial sutures of a finer silk drawing peritoneum well over line of incision, parietal peritoneum drawn together with continuous suture of fine silk, and abdominal incision closed with silk-worm gut sutures. Convalescence was somewhat protracted on account of an attack of bronchitis and the severe hæmorrhage; however, the temperature never reached 100° F., and the patient made a remarkably good recovery. The child, which was a male, was born partly asphyxiated, but under the care of Dr. Stevens, who Schultzed him, he came to, but never cried lustily. He died on the third day; had had a slight convulsion the preceding day; his muscles had seemed continually to be tense, and he had vomited coffee-ground vomit. There was an autopsy, which only revealed some intussusceptions of small intestine, probably caused during the death agony, and some hæmorrhage at lower end of the œsophagus. This gave rise to the interesting question as to whether this could have been done by the Schultzing, even when in experienced hands. The stitches were removed on the eighth day, when the incision was found perfectly healed. Before the patient left the hospital a careful examination of the tumour was made. It had come down into the pelvis, and seemed so near that one was tempted to remove it by morcellement through the vagina. However, it was found that the uterus was adherent to the anterior abdominal wall, and this procedure was thrown aside owing to the expressed opinion of Dr. Smyly that if it were done, and hæmorrhage should occur, one could not check it by drawing down the uterus due to its adhesions. It was decided that the operation should be done from abdomen; however, the patient refused operation. Her present condition is splendid, she suffers in no way, and the line of the incision is perfectly even and firm.

DR. SMYLY remarked that every step of the operation, though

apparently a simple one, was the subject of controversy. Professor Murdoch Cameron, of Glasgow, has said that the position of the child depended on the placenta, and he would like to know if this opinion was borne out in this case, and if the abdomen of the child was turned towards the placenta.

DR. PUREFOY said that, though a recent writer had advocated the low incision in preference to the fundal incision, his own experience had led him to think that the high incision was certainly the better. He thought that the careful application of the sutures and adjustment of the peritoneum had a great deal to do with the success of a case. He had always regarded Schultzing with misgivings, owing to the possibility of injury to the soft parts of the child.

DR. TWEEDY did not see the necessity of avoiding insertion of the ligatures right through the endometrium if the uterus were aseptic, and this method gave a firmer union in his opinion. Lusk says that an incision is made low down in the uterus in order to avoid hæmorrhage, whereas it has been recently claimed that an incision through the fundus, the most muscular portion of the uterus, obviates much hæmorrhage.

DR. KIDD, in reply, said the child was very nearly in the left occipito-anterior position, and the placenta was more over to the right of the mother. He was not opposed to Schultzing, and he thought that Sylvester's method was far more likely to cause hæmorrhages. With regard to the question of suturing, he had no guarantee that the uterus was aseptic in this case.

The Section then adjourned.

SESSION 1899-1900.

SECTION OF PATHOLOGY.

President—A. C. O'SULLIVAN, M.D.

Sectional Secretary—E. J. McWEENEY, M.D.

Friday, November 3, 1899.

DR. E. H. BENNETT, President of the Academy, in the Chair.

Pathological Eyes.

MR. ARTHUR H. BENSON and DR. H. C. EARL exhibited a series of Pathological Eyes, Half Globes (mounted in formalin), and Microscopic Sections.

(a). Glioma was the only tumour originating in the retina. It was, perhaps, the most malignant growth occurring in the human body, and the prognosis was favourable only when removal was carried out early. It was essentially a disease of infancy and early life, and might even be congenital. It was usually monocular, and never pigmented. The specimen was from a child aged four months. It was now seven months since the operation, and so far no recurrence had taken place.

(b). The second case (sarcoma of choroid) was that of a boy aged three years. On admission a fungating mass, the size of a duck's egg, was protruding from the right orbit. This contained the remains of the globe, and filled the orbit. Removal of the whole contents of the orbit was performed, but it was found that the orbit back to the posterior foramen was completely filled with the growth, and the optic nerve was so disintegrated that no trace of it was visible to the naked eye. As the growth could not be entirely removed the prognosis was bad, and recurrence did actually take place a month after the child's return home.

(c). The third specimen (epithelioma of cornea and conjunctiva) was taken from a man aged sixty-nine. The whole cornea and part of the ocular conjunctiva were covered by the growth, which was so extensive, and seemed to penetrate so deeply into the subjacent tissue that he (Dr. Benson) felt sure it could not with safety be excised, and that enucleation gave the man the only chance. The tumour was unpigmented, flat, and sessile, with a very broad base, and had ulcerated.

(d). Bony degeneration of choroid in a woman aged fifty. She had had a diabetic cataract removed from one eye in 1898. The other eye was collapsed and blind since childhood, the result of an

accident. It was irritable and painful to the touch, and, as it was believed to be the source of irritation in consequence of possessing a bony choroid, it was removed. The choroid was found converted in its whole extent into a layer of true bone. The lens was calcified, not ossified.

(e.) Intra-ocular hæmorrhage. Patient, aged forty-five, gave history of cataract of right eye of four years' duration. During the last three months the pain in the eye had been very severe, and one month ago a large hæmorrhage occurred, which filled the anterior chamber, and the pain became constant and intolerable. The tension was about — 1, and the globe had the appearance of a shrinking one. Enucleation was performed. No cause for the hæmorrhage (which probably came from the iris) was found.

(f). Collapsed globe, after cataract removal, in a woman on whose left eye a combined extraction of an opaque lens was performed. An asthenic suppurative cyclitis resulted, the globe shrank, and vision was lost in the eye. Seven and a half months after the globe was collapsed, and the right eye had a condition very suggestive of sympathetic ophthalmitis—serous iritis, keratitis punctata, pupil fixed, tension normal, and slight circumcornale vascularity. The lens was opaque, and no illumination of the fundus could be obtained. There was no pain. As the shrunken left globe was believed to be the cause of the trouble in the right eye enucleation was performed. Four days later the patient became delirious. She continued in a low state, and thirteen days after operation refused food altogether, and the bowels acted involuntarily. No organic lesion could be found, and she died sixteen days after operation.

MR. HENRY GRAY CROLY said he thought that one could not be certain that sarcoma would not return until a period of ten or, perhaps, eighteen months had elapsed. He thought that in the fatal case the woman's death was due to septicæmia.

MR. BENSON, replying, said he did not mean to convey that a case of sarcoma would be safe at the end of seven months. He had merely said that his case of glioma of the retina was safe up to the present—seven months after the operation. With regard to the other case, it was quite conceivable that the woman died of sepsis, but at the time he did not think it at all probable.

Exhibitions.

MR. HENRY GRAY CROLY exhibited (1) fracture of the base of the skull; (2) sarcoma of testis. The fracture of the base of the skull was the most perfect he had ever seen. It extended through

the petrous bone, body of sphenoid, and ethmoid. The man was found on the road in a pool of blood, and was carried to hospital in a collapsed state. There was great hæmorrhage from both ears. He recovered consciousness sufficiently to say that he felt himself better. He lived for three days. There was no lesion of the brain, and no hæmorrhage into the brain. There was no fracture of the vault of the skull.

The PRESIDENT remembered a case of fracture of the skull in which the occipital and frontal regions could be moved on each other. The man recovered completely.

MR. CROLY, in reply, thought the case mentioned by the President was one of fracture of the vault of the skull. Men recover occasionally from fracture of the base of the skull. In this case the remarkable fact was that the man lived so long.

DR. KNOTT showed some specimens of fractured humeri. In connection with one showing fracture of the lower end of the bone, he drew attention to the fact that the epiphyseal line of the lower articular surface of the humerus does not involve the condyles.

The PRESIDENT concurred in the diagnosis of one of the specimens as a fracture passing obliquely through the elbow-joint, as it had none of the features of an epiphysary displacement.

MR. CROLY, referring to one of the specimens, pointed out a fact which he thought a great many did not know, and which Robert Smith had drawn particular attention to—namely, that epiphysary fracture of the upper end of the humerus included the tuberosities. He (Mr. Croly) in teaching fractures of the upper end of the humerus impresses on his pupils that there are *two* fractures of the *surgical* neck, one being epiphysary *BELOW* the tuberosities, one lower down in the *surgical* neck. The line of fracture through the *ANATOMICAL* neck is *ABOVE* the tuberosities. Speaking of the specimen to which Dr. Bennett had drawn attention he would certainly say it was not an epiphysary fracture, since the condyles here were carried forwards instead of backwards, which they knew was distinctive of epiphysary disjunction.

DR. KNOTT, in reply, said that the epiphysary line at the upper end of the humerus was always exactly horizontal. In addition to the observation Mr. Croly had made that from the action of the triceps it would be almost necessary that there should be a backward displacement in epiphysary disjunction of the lower end of the humerus, there was also the point that his specimen involved the external condyle, which it would not do if it were an epiphysary disjunction, as the external condyle did not belong to the epiphyses, but to the shaft.

The Section then adjourned.

SECTION OF MEDICINE.

President—JOHN W. MOORE, M.D., President of the Royal College of Physicians of Ireland.

Sectional Secretary—R. TRAVERS SMITH, M.D.

Friday, November 17, 1899.

The PRESIDENT in the Chair.

A Case of Cerebro-spinal Disseminated Sclerosis (Patient exhibited).

DR. CRAIG exhibited a man, aged thirty-four, suffering from insular sclerosis, and demonstrated as far as possible the classical symptoms of that disease as first described by Charcot—(1) There was defective vision, o.d. $\frac{6}{12}$, o.s. $\frac{6}{8}$; the field of vision was not contracted; the optic papillæ had a dirty white complexion; there was nystagmus and defective power of consensual, lateral, and upward motion of the eyeballs. (2) Intention tremors were very evident. (3) Scanning speech was fairly characteristic. (4) A spastic condition of the lower extremities existed, with increased knee-jerks, rectus and ankle-clonus, weakness and rigidity of the muscles, and the "toe phenomenon" of Babinski. (5) Considerable delay precedes the act of micturition.

The next case referred to was a boy, who, at the age of nine, was found to be blind of the right eye, with atrophy of the disc, which seemed to Dr. C. E. Fitzgerald to be congenital. Right eye was normal. Three years after the lower extremities became spastic, tenotomy was performed in London to correct the talipes equino-varus, and shortly afterwards the sight was lost in the right eye. Nystagmus, intention tremors, and slow, monotonous speech had all developed. A probably specific origin, the youth of the patient, the completeness of the optic atrophy, and the surgical interference were the points of interest.

The third case mentioned was that of a young lady who, at the age of seventeen, developed symptoms of an apparently hysterical character.

In 1882 there was transient blurring, defective vision, with hazy disc in the right eye, and recovery in a month.

In 1884 left optic neuritis, with right hemiparesis, occurred, followed by recovery within a few weeks.

In 1885 there was again transient dimness of the right eye.

In 1888 there was transient blurring in both eyes, but discs were normal.

In 1889 there was transitory blurring in left eye, with vision and discs normal.

In 1890 there was numbness in right leg, weakness in both, giddiness, diplopia, blurred vision, defective lateral movement, and, for the first time, *nystagmus* in the left eye. Delay preceding micturition, with excessive secretion of urine, was noted.

In 1891 there was apparently complete recovery from all the symptoms, save very slight *nystagmus*. Patient felt quite strong and well.

In 1896 patient became unsteady in walking, and was easily fatigued; knee-jerks were increased, but no ankle-clonus and no tremors existed. Diplopia, blurred vision, and *nystagmus* were present. Physical disturbances and slight blunting of mental faculties were observed.

In 1898 intention tremors first appeared; legs became quite rigid; ankle and rectus-clonus and toe phenomenon were present; loss of muscular sense in both upper and lower extremities was very manifest; control of bladder was weak; vision o.d. $\frac{6}{8}$, o.s. $\frac{6}{2}$; hazy discs and *nystagmus*, but no distinctive syllabic speech.

If only the classical symptoms were to be relied upon in forming a diagnosis the facility for making mistakes becomes very evident. In this case—1. *Nystagmus* did not manifest itself for 6 years after the initial symptoms. 2. A *spastic condition* of the extremities was 14 years in making an appearance. 3. *Intention tremors* appeared after the lapse of 16 years. 4. *Syllabic speech* cannot be said to exist at all. The difficulty in arriving at a diagnosis was, therefore, chiefly limited to the earlier years where the transient, ocular, and parietic symptoms might have been considered to be of a functional nature. Dr. Craig then contrasted in detail the differential diagnosis between organic disease and functional disturbance of the central nervous system.

The PRESIDENT (Dr. J. W. Moore) said Dr. Craig had laid before them a very classical paper, which, since this disease was so liable to be confounded with another important disease—namely, hysteria—was worthy of the attention of all clinical and practical physicians.

DR. J. B. COLEMAN said that the disease was not very uncommon. A case which he had under observation at present did not differ very much from the case exhibited.

DR. FINNY took exception to one of the diagnostic points Dr. Craig had mentioned as distinguishing this disease from hysteria. The statement he referred to was that ankle-clonus was not present in hysteria. He had a clear recollection of ankle-clonus occurring distinctly in a case of pure hysteria, and ankle-clonus, which was once thought of great value as pointing to structural changes in the pyramidal tract and cord, was not now considered so reliable. In many cases of typhoid fever ankle-clonus could be found where there was no evidence of hysteria or structural disease of the spinal cord.

SIR GEORGE DUFFEY said he could corroborate what Dr. Finny had said about the presence of ankle-clonus in hysteria. He remembered a case in the City of Dublin Hospital which presented peculiar nervous symptoms, and about which there was great doubt as to the diagnosis.

DR. KNOTT said that Sharpe's great test was to ask the patient to shake hands. In cases of chorea the patient made a series of jerky movements, whereas in disseminated sclerosis the patient always went in a curved line. He was struck with the extraordinary similarity in the way patients suffering from this disease carried their heads. He noticed that the pupils of the patient exhibited were a good deal larger than normal. He suggested that the peculiar monotone of the speech could have been better demonstrated by getting the patient to recite prose rather than poetry.

DR. R. TRAVERS SMITH mentioned a case of a girl, aged about twenty-two, who presented the clinical group of symptoms known as spastic paraplegia. The diagnosis between insular sclerosis and primary lateral sclerosis was at first doubtful, but the question was finally settled at the end of a few months by the patient developing an external strabismus, which he considered was an important sign in the diagnosis of insular sclerosis. After that other symptoms of the disease had set in.

The PRESIDENT (Dr. J. W. Moore), referring to Dr. Finny's remark, suggested that at a certain period in typhoid fever there might be structural changes in the spinal cord. Such changes are, however, of a transitory nature, for just as the heart suffers in zymotic diseases so also the spinal cord may suffer from a purely temporary organic change.

DR. CRAIG, in reply, said that, with reference to Dr. Finny's remarks, he agreed that in severe illness, and, indeed, in many chronic diseases, structural changes might take place in the cord and ankle-clonus and other symptoms be evinced. In answer to

Sir George Duffey, the third case he (Dr. Craig) had referred to often got perfectly well for two years, and it was 16 years before they knew she was not suffering from hysteria.

Senile Dementia.

DR. CONOLLY NORMAN read a paper on senile dementia. He dwelt on certain points of clinical interest, emphasising the fact, which he held is too often forgotten, that this form of mental trouble may appear with apparent rapidity, and often seems to develop after an attack of acute physical illness—influenza or the like. Dr. Norman pointed out that the most typical mental condition in senile dementia was characterised not only by a forgetfulness of recent events, but also by an abnormal acuteness of recollection of events long past. He, therefore, thought that mere amnesia did not cover the field. He gave a somewhat detailed description of the conditions of aphasia, paraphasia, and alexia, which are sometimes met with in cases of senile dementia.

DR. NINIAN FALKINER inquired if there was generally albuminuria in cases of senile dementia, and asked if it was a fact that there was a train of mental symptoms in chronic Bright's disease closely resembling those of senile dementia.

DR. LAW said he had a little experience of asylum work in England and afterwards in British Guiana, and a point that struck him when in the latter place was the large number of cases of senile dementia in comparatively young subjects, where in this country they would expect an attack of more active mental disease. He also noticed that cases of that kind were commonest in the lowest races in the colony.

DR. NORMAN, in reply, said that albuminuria and bad kidney disease associated with senile dementia was only what they might expect. He could not, however, subscribe to the theory of some nervous pathologists that senile dementia depended upon arterio-sclerotic conditions in the brain, although it was undoubtedly true that gouty kidney and extensive arterio-sclerosis was common in persons dying of senile dementia. Consequently the two conditions—mental disturbance and albuminuria—co-existing would not surprise him. He had heard of various conditions of mental disturbance being described as the insanity of Bright's disease. With regard to the racial question, Dr. Law's remarks bore out his statement that the more the brain was used the less the probability of the occurrence of senile dementia.

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D. Univ. Dubl.;
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VITAL STATISTICS

For four Weeks ending Saturday, November 4, 1899.

The deaths registered in each of the four weeks in the twenty-three principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns, &c.	Week ending				Average Rate for 4 weeks	Towns, &c.	Week ending				Average Rate for 4 weeks
	Oct. 14	Oct. 21	Oct. 28	Nov. 4			Oct. 14	Oct. 21	Oct. 28	Nov. 4	
23 Town Districts	25.2	26.8	26.5	23.2	25.4	Limerick -	16.8	23.9	9.8	18.2	17.2
Armagh -	14.3	7.1	28.5	14.3	16.1	Lisburn -	17.0	25.7	12.8	21.3	19.2
Ballymena	5.6	5.6	28.2	11.3	12.7	Londonderry	29.8	23.6	25.1	17.3	24.0
Belfast -	22.3	21.3	24.4	19.5	21.9	Lurgan -	36.5	41.1	9.1	18.2	26.2
Carrickfergus	11.7	0.0	23.4	11.7	11.7	Newry -	20.1	16.1	8.1	8.1	13.1
Clonmel -	43.8	24.3	0.0	9.7	19.5	Newtownards	22.7	34.0	11.3	5.7	18.4
Cork -	23.4	27.0	21.5	25.6	25.6	Portadown -	6.2	24.7	18.6	6.2	13.9
Drogheda -	19.0	3.8	11.4	30.4	16.2	Queenstown	5.7	0.0	28.7	11.5	11.5
Dublin -	31.3	35.3	35.9	31.3	33.4	Sligo -	10.2	25.4	15.2	25.4	19.1
(Reg. Area)						Tralee -	39.2	44.8	22.4	11.2	29.4
Dundalk -	12.6	8.4	29.3	20.9	17.8	Waterford -	17.9	39.8	23.9	27.9	27.4
Galway -	18.9	11.3	26.4	18.9	18.9	Wexford -	22.6	54.2	13.5	4.5	23.7
Kilkenny -	18.9	14.2	37.8	14.2	21.3						

In the week ending Saturday, November 4, 1899, the mortality in thirty-three large English towns, including London (in which the rate was 18.6), was equal to an average annual death-rate of 18.8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 18.8 per 1,000. In Glasgow the rate was 20.1. In Edinburgh it was 18.1.

The average annual death-rate represented by the deaths registered during the same week in the Dublin Registration Area and in the twenty-two principal provincial Urban Districts of Ireland was 23·2 per 1,000 of their aggregate population, which, for the purpose of this return, is estimated at 1,053,188.

The deaths from the principal zymotic diseases in the twenty-three districts were equal to an annual rate of 3·3 per 1,000, the rates varying from 0·0 in thirteen of the districts to 7·3 in the Dublin Registration Area. Among the 131 deaths from all causes registered in Belfast are one from whooping-cough, one from simple continued fever, and 3 from enteric fever. The 37 deaths in Cork comprise one from diphtheria, and 2 from diarrhoea. The 11 deaths in Londonderry comprise one from enteric fever and 2 from diarrhoea.

In the Dublin Registration Area the births registered during the week amounted to 225—104 boys and 121 girls; and the deaths to 216—112 males and 104 females.

The deaths, which are 38 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 32·2 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the area, the rate was 31·3 per 1,000. During the forty-four weeks ending with Saturday, November 4, the death-rate averaged 29·4, and was 2·7 over the mean rate for the corresponding portions of the ten years 1889–1898.

The number of deaths from zymotic diseases registered during the week was 53, being 31 over the average for the corresponding week of the last ten years, but 15 under the number for the previous week. The 53 deaths comprise 38 from measles—being 6 under the number registered from that cause in the preceding week and 14 under that for the week ended October 21—one from influenza, 2 from whooping-cough, 3 from diphtheria, 2 from enteric fever, and 6 from diarrhoea. Forty-four of the 53 deaths from zymotic diseases occurred among children under 5 years of age.

The number of cases of measles admitted to hospital during the week was 56, being 4 under the admissions in the preceding week, and equal to the number admitted in the week ended October 21. Forty-two measles patients were discharged, 4 died, and 172 remained under treatment on Saturday, November 4, being 10 over the number in hospital on that day week.

Nineteen cases of scarlatina were admitted to hospital, against 11 admissions in the preceding week and 10 in that ended October 21. Nine patients were discharged, and 62 remained under treat-

ment on Saturday, November 4, being 10 over the number in hospital at the close of the preceding week.

The number of cases of enteric fever admitted to hospital was 40, being 4 under the admissions in the preceding week, and one under the number admitted in the week ended October 21. Thirty-eight patients were discharged during the week, 3 died, and 273 remained under treatment on Saturday, November 4, being one under the number in hospital on the previous Saturday.

The hospital admissions for the week included, also, 3 cases of diphtheria; 9 cases of this disease remained under treatment in hospital on Saturday.

The deaths from diseases of the respiratory system amounted to 53, being 20 in excess of the average for the corresponding week of the last ten years, and 13 over the number for the previous week. They comprise 36 from bronchitis and 16 from pneumonia.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of October, 1899.

Mean Height of Barometer, -	-	-	30·022 inches.
Maximal Height of Barometer (on 8th, at 9 a.m.),	30·378	„	
Minimal Height of Barometer (on 1st, at 9 a.m.),	29·333	„	
Mean Dry-bulb Temperature, -	-	-	48·5°.
Mean Wet-bulb Temperature, -	-	-	46·8°.
Mean Dew-point Temperature, -	-	-	45·1°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·304	inch.	
Mean Humidity, -	-	-	88·7 per cent.
Highest Temperature in Shade (on 18th), -	65·1°.		
Lowest Temperature in Shade (on 6th), -	32·9°.		
Lowest Temperature on Grass (Radiation) (on 6th)	-	-	29·0°.
Mean Amount of Cloud, -	-	-	43·6 per cent.
Rainfall (on 11 days), -	-	-	1·538 inches.
Greatest Daily Rainfall (on 11th), -	-	-	·263 inch.
General Directions of Wind, -	-	-	S.W., W.

Remarks.

October, 1899, was a quiet, foggy, but withal fine month. Anticyclonic systems tended to prevail in the British Islands, and so there was a large diurnal range of temperature, cold foggy nights alternating with sunny, warm days. The weather broke

upon the 24th, and from that date to the end of the month cyclonic conditions prevailed and rain fell frequently though not heavily, except in the South of England on the 26th and 27th, when 1·32 inches was the measurement in London.

In Dublin the arithmetical mean temperature ($50\cdot2^{\circ}$) was slightly above the average ($49\cdot7^{\circ}$); the mean dry-bulb readings at 9 a.m. and 9 p.m. were $48\cdot5^{\circ}$. In the thirty-four years ending with 1898, October was coldest in 1892 (M. T. = $44\cdot8^{\circ}$), and in 1896 (M. T. = $45\cdot0^{\circ}$). It was warmest in 1876 (M. T. = $53\cdot1^{\circ}$). The M. T. in 1898 was $52\cdot8$.

The mean height of the barometer was 30·022 inches, or 0·182 inch above the corrected average value for October—namely, 29·840 inches. The mercury rose to 30·378 inches at 9 a.m. of the 8th, having fallen to 29·333 inches at 9 a.m. of the 1st. The observed range of atmospheric pressure was, therefore, 1·045 inches.

The mean temperature deduced from daily readings of the dry-bulb thermometer at 9 a.m. and 9 p.m. was $48\cdot5^{\circ}$, or $6\cdot4^{\circ}$ below the value for September, 1899. The arithmetical mean of the maximal and minimal readings was $50\cdot2^{\circ}$, compared with a twenty-five years' average of $49\cdot7^{\circ}$. Using the formula, *Mean Temp.* = *Min.* + (*max.* — *min.* \times $\cdot485$), the mean temperature was $49\cdot9^{\circ}$, or $0\cdot4^{\circ}$ above the average mean temperature for October, calculated in the same way, in the twenty-five years, 1865–89, inclusive ($49\cdot5^{\circ}$). On the 18th the thermometer in the screen rose to $65\cdot1^{\circ}$ —wind, S.E.; on the 6th the temperature fell to $32\cdot9^{\circ}$ —wind, W.S.W. The minimum on the grass was $29\cdot0^{\circ}$, also on the 6th. The thermometer did not sink to 32° in the screen, but frost occurred on the grass on 6 nights.

The rainfall was 1·538 inches, distributed over 11 days—the rainfall and the rainy days were decidedly below the average. The average rainfall for October in the twenty-five years, 1865–89, inclusive, was 3·106 inches, and the average number of rainy days was 17·6. In 1880 the rainfall in October was very large—7·358 inches on 15 days. In 1875, also, 7·049 inches fell on 26 days. On the other hand, in 1890, only ·639 inch fell on but 11 days; in 1884, only ·834 inch on but 14 days; and in 1868 only ·856 inch on 15 days. In 1898, the October rainfall was 3·579 inches on 19 days.

Lightning was seen on the night of the 29th. High winds were noted on 8 days, but attained the force of a gale on only one occasion—the 29th. The atmosphere was more or less foggy in Dublin on the 6th, 7th, 8th, 9th, 14th, 17th, 18th, 19th, 20th, 21st,

22nd, 23rd, and 24th. A solar halo appeared on the 18th. Lunar halos were seen on the 17th and 18th. Hail fell on the 12th.

The rainfall in Dublin during the ten months ending October 31st amounted to 22·486 inches on 149 days, compared with 12·366 inches on 123 days during the same period in 1887 (the dry year), 22·052 inches on 165 days in 1896, 24·081 inches on 179 days in 1897, 21·547 inches on 156 days in 1898, and a twenty-five years' average of 22·840 inches on 160·4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in October amounted to 1·560 inches on 11 days. Of this quantity ·520 inch fell on the 1st. From January 1st, 1899, up to October 31st, rain fell at Knockdolian on 150 days to the total amount of exactly 30 inches. In 1893 the rainfall in the corresponding ten months was 17·801 inches on 133 days; in 1894, 32·221 inches on 154 days; in 1897, 32·730 inches on 171 days; and in 1898, 24·177 inches on 140 days.

At Cloneevin, Killiney, Co. Dublin, the rainfall in October was 1·24 inches on 12 days, compared with ·710 inch on 14 days in 1893, 6·460 inches on 17 days in 1894, 2·280 inches on 11 days in 1897, 3·530 inches on 18 days in 1898, and a fourteen years' average (1885–1898) of 3·319 inches on 16 days. On the 1st, ·30 inch fell. Since January 1, 1899, 24·99 inches of rain have fallen at this station on 151 days.

At the National Hospital for Consumption, Newcastle, Co. Wicklow, the rainfall in October was 1·484 inches on 11 days, compared with 3·175 inches on 13 days in 1897, and 4·385 inches on 17 days in 1898. Of this quantity, ·521 inch was recorded on the 1st. The highest temperature in the screen was 63·0° on the 18th, the lowest was 35·2° on the 15th. At this Second Order Station the rainfall from January 1 to October 31, inclusive, amounted to 27·643 inches on 140 days, compared with 26·479 inches on 139 days in the corresponding 10 months of 1898.

At Recess, Co. Galway, the rainfall was 3·261 inches on 17 days, ·620 inch being registered on the 11th, and ·609 inch on the 28th. On the 30th a hailstorm occurred in the morning and a thunderstorm in the evening.

PERISCOPE.

THE INFECTIOUSNESS OF RHEUMATISM AND CHOREA, AND THE RELATION BETWEEN THEM.

It is pretty generally believed that acute rheumatic polyarthritis is an infectious disease, even if of multiple origin.

Numerous observers have found micro-organisms in the lesions of the disease and of its complications, but these have differed among themselves, and it has not, heretofore, been possible to cultivate the micro-organisms artificially, and with them again to generate acute polyarthrititis. For a long time some relation has been thought to exist between acute rheumatism and chorea, the latter affection not rarely following the former, both prevailing at corresponding seasons, and both being often complicated by endocarditis. Chorea also is coming gradually to be looked upon as an infectious disease, but concerning its bacteriology little is as yet known. Whether chorea is dependent upon the same causes as acute rheumatism or upon allied causes must be considered as yet merely a matter for speculation. An important contribution to this most interesting subject has recently been made by Westphal, Wasserman and Malkoff in the *Berliner klinische Wochenschrift*, No. 29, 1899. These observers report a case of acute articular rheumatism followed by chorea and complicated by endocarditis and nephritis, in which they succeeded in isolating from the blood, the brain, and the endocarditic vegetations a micrococcus susceptible of culture and capable of inducing polyarthrititis when inoculated into lower animals. The patient was a girl, nineteen years old, who in the sequence of an attack of acute articular rheumatism, developed chorea, with general movements, delirium, elevation of temperature, acceleration of pulse, and collapse, followed by death. *Post-mortem* examination disclosed the presence of fine, delicate endocarditic vegetations upon the mitral leaflets, as well as recent parenchymatous nephritis. From the blood, the brain, and the valve-leaflets was isolated a micro-organism, injection of which in small quantities into the blood-vessels was followed in animals by the development of high fever and multiple neuritis, usually terminating fatally. The affected joints presented evidences of inflammation, and in the exudate was found the micro-organism already mentioned. Injection of this after culture again induced acute multiple arthrititis. The micro-organism is a streptococcus, although in the tissues and in the blood it may appear as a diplococcus, and it may be the same as that found by other observers in the vegetations of endocarditis, but not subjected to culture and inoculation. Its growth requires a higher degree of alkalinity of the culture medium than usual and a larger amount of peptone.—*New York Med. Record*, Nov. 18, 1899.

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